



CANADA YEAR BOOK

1963-64

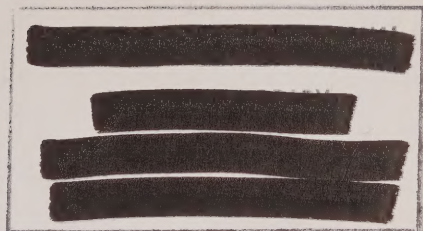
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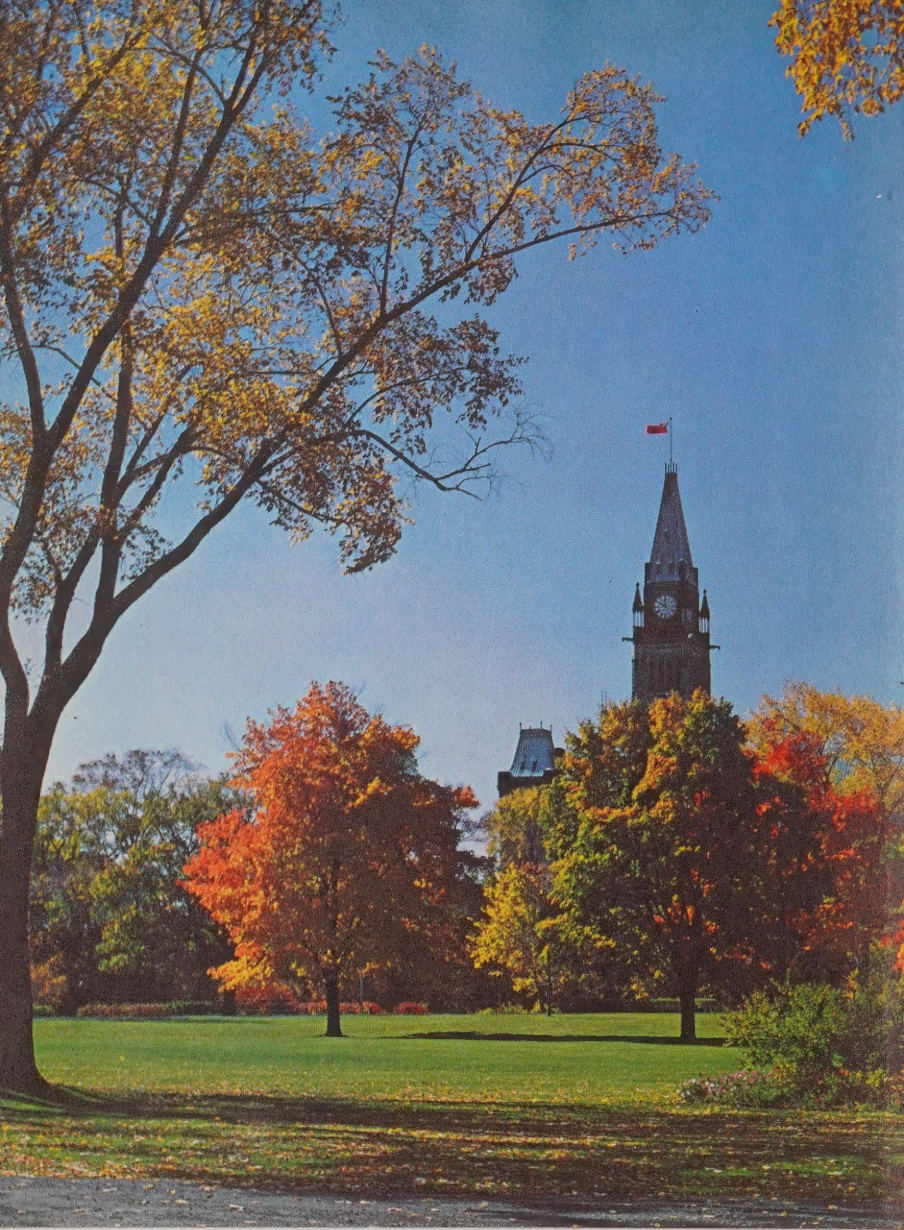
The Ontario Institute
for Studies in Education

Toronto, Canada



MAR 23 1964








The towers of Canada's
Parliament Buildings rise
serene in the blue and
gold of an October day.

Malak, Ottawa

REF.



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CANADA YEAR BOOK

1963-64

OFFICIAL STATISTICAL ANNUAL OF THE
RESOURCES, HISTORY, INSTITUTIONS AND SOCIAL
AND ECONOMIC CONDITIONS OF CANADA

Published by Authority of

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1964

PREFACE

The 1963-64 edition of the Canada Year Book continues a series of annual publications giving official statistical and other information on almost every measurable phase of Canada's development. As the economy of the country has expanded, the Dominion Bureau of Statistics has endeavoured to present the story of this development, summarizing a great mass of detailed statistical information concisely within the covers of one volume and supplementing it with data from other Departments of the Federal Government and from the provinces. The 1963-64 edition is so designated because it will be released in the early months of 1964; the cut-off date for each chapter was advanced by about three months from that of the previous edition.

Special feature articles are presented in each edition of the Year Book. Those in the current issue include: "Changes in Canadian Agriculture as Reflected by the Census of 1961", pp. 409-415; "Secondary Manufacturing in Canada", pp. 637-643; "Recent Developments in Public Technical and Vocational Education in Canada", pp. 737-743; "Canadian Merchandise Exports and Imports in 1962-63", pp. 907-911; and "Life Insurance", pp. 1071-1077. In addition, certain standard material is treated in somewhat more detail in this edition, such as the sections on "Main Physical and Economic Features of the Provinces and Territories" and "Provincial Wildlife Conservation Measures".

All chapters include the latest data available at the time of printing. The Population Chapter contains summary population statistics from 1961 Census and the Agriculture Chapter summary agricultural census figures. After the printing of Chapter II on Constitution and Government, changes were made in the administrative functions of several Federal Government Departments and in ministerial responsibility (pp. 104-122). Such changes, up to Nov. 15, 1963, have been included in the Organization Chart inserted facing p. 104. Certain other revisions to the information in this Chapter are given in the Appendix, which also contains a list of the members of the House of Commons as elected at the Twenty-Sixth General Election, Apr. 8, 1963; this was not available in time to be included in Chapter II. Enclosed in the pocket on the inside cover of the volume is a recently completed 140-mile-to-the-inch political map and a 100-mile-to-the-inch map showing the distribution of the population of Canada as at the date of the latest Census, June 1, 1961.

The present volume was produced in the Canada Year Book, Handbook and Library Division by Miss Margaret Pink, Associate Editor, and the Year Book staff under the editorship and direction of Dr. C. C. Lingard, Director of the Division. The charts and maps, except where otherwise indicated, were prepared by L. Tessier of the Drafting Unit and the Surveys and Mapping Branch of the Department of Mines and Technical Surveys.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible either to the persons or to the public service concerned.

Walter E. Sufferat.

DOMINION STATISTICIAN

DOMINION BUREAU OF STATISTICS,
Ottawa, Nov. 15, 1963.

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WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed; an exception is the ton where, unless otherwise stated, the short ton of 2,000 lb. is meant.

Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. Where reference is made to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals 0.96 U.S. fluid ounce and one Imperial gallon equals 1.2 U.S. gallons.

1 Imperial pint=20 fluid ounces	1 short ton=2,000 lb.
1 U.S. pint=16 fluid ounces	1 long ton=2,240 lb.
1 Imperial quart=40 fluid ounces	1 barrel crude petroleum=35 Imperial gallons
1 U.S. quart=32 fluid ounces	1 ounce avoirdupois=0.91146 ounce troy (oz.t.)
1 Imperial gallon=160 fluid ounces	1 statute mile=5,280 feet
1 U.S. gallon=128 fluid ounces	1 nautical mile=6,080 feet
1 Imperial proof gallon=1.36 U.S. proof gallon	

The following weights and measures are used in connection with the principal field crops and fruit; 2.3 bu. of wheat are required to produce 100 lb. of flour.

	<i>Pounds per Bushel</i>		<i>Pounds per Bushel</i>
Grains—		Fruits (standard conversions)—	
Wheat.....	60	Apples.....	45
Oats.....	34	Pears, plums, cherries, peaches, grapes and apricots.....	50
Barley and buckwheat.....	48	Strawberries and raspberries.....(per qt.)	1.25
Rye, flaxseed and corn.....	56		
Mixed grains.....	50		
All others.....	60		

Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, all figures are for calendar years except where otherwise indicated in text or table headings.

Miscellaneous

- Maritime Provinces=Prince Edward Island, Nova Scotia and New Brunswick
- Atlantic Provinces=Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
- Btu.=British thermal unit (coal)
- Central Canada=Quebec and Ontario
- Prairie Provinces=Manitoba, Saskatchewan and Alberta
- Mcf.=thousand cubic feet (gas)
- n.e.s.=not elsewhere specified
- n.o.p.=not otherwise provided for
- psi. (atomic research)=per square inch
- D.B.H. (forestry)=diameter at breast height.

SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:—

- . . figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed or where "a trace" is meant.
- ° preliminary figures.
- ° revised figures.

CHAPTER I.—PHYSIOGRAPHY AND RELATED SCIENCES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on the facing page.

PART I.—GEOGRAPHY AND GEOLOGY*

Canada occupies the northern half of the North American Continent with the exception of Alaska and Greenland, extending in longitude from Cape Spear, Newfoundland, at 52° 37' W, to Mount St. Elias, Yukon Territory, at 141° W, a distance of 88° 23'. In latitude it stretches from Middle Island in Lake Erie, at 41° 41' N, to the North Pole. The northernmost point of land is Cape Columbia on Ellesmere Island, at 83° 07' N. Canada is thus a western and a northern country, a fact of increasing strategic significance.

In shape, Canada resembles a distorted parallelogram with its four corners making important salients. In the north the salient formed by the Arctic Archipelago, which penetrates deep into the Arctic basin, guards the northern approaches to the Continent from Europe and Asia and makes Canada neighbour to the Union of Soviet Socialist Republics. In the south the salient of peninsular Ontario thrusts far into the heart of the United States. In the east the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with Britain and France. In the west the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacific Ocean between continental North America and the Far East. Canada thus lies at the crossroads of contact with the principal powers and some of the most populous areas of the world.

* Revised by the Geographical Branch, Department of Mines and Technical Surveys.



1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land areas as agricultural, forested, etc., is given at p. 31.

Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
Newfoundland.....	143,045	13,140	156,185	4.1
Island of Newfoundland.....	41,164	2,195	43,359	1.1
Labrador.....	101,881	10,945	112,826	3.0
Prince Edward Island.....	2,184	—	2,184	0.1
Nova Scotia.....	20,402	1,023	21,425	0.6
New Brunswick.....	27,835	519	28,354	0.7
Quebec.....	523,860	71,000	594,860	15.4
Ontario.....	344,092	68,490	412,582	10.7
Manitoba.....	211,775	39,225	251,000	6.5
Saskatchewan.....	220,182	31,518	251,700	6.5
Alberta.....	248,800	6,485	255,285	6.6
British Columbia.....	359,279	6,976	366,255	9.5
Yukon Territory.....	205,346	1,730	207,076	5.4
Northwest Territories.....	1,253,438	51,465	1,304,903	33.9
Franklin.....	641,753	7,500	649,253	14.3
Keewatin.....	218,460	9,700	228,160	5.9
Mackenzie.....	493,225	34,265	527,490	13.7
Canada.....	3,560,238	291,571	3,851,809	100.0

In size, Canada is the largest country in the Western Hemisphere and the second largest country in the world. Its area of 3,851,809 sq. miles may be compared with that of the Union of Soviet Socialist Republics, 8,649,512 sq. miles,* the United States of America (including Alaska and Hawaii), 3,615,214 sq. miles,* and Brazil, 3,287,204 sq. miles.* It is more than forty times the size of Britain and eighteen times that of France. The immense size of the country, while encompassing many resources and seeming to afford much scope for settlement, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8 p.c. and the currently accessible productive forested land 19 p.c. of the total. The population of Canada, estimated at 18,570,000 on June 1, 1962, may be compared with 183,742,000† for the United States (including Alaska and Hawaii) (1961) and with 73,088,000† for Brazil (1961).

The milages in Table 2 are another indication of the size of Canada. They show the length of communication facilities required between the larger cities, between outlying industrial communities built up around large mining or smelting projects and the nearest cities, and between northern outposts and the supplying cities. In this table mileage given is for the major means of transport used between the points concerned; air milages are given for most transcontinental distances.

* *United Nations Statistical Yearbook, 1961.*

† *United Nations Population and Vital Statistics Report, Oct. 1, 1962.*

2.—Travel Distances between Certain Cities and Other Points of Interest in Canada

NOTE.—The dash used in this table indicates that the distance concerned is of no particular interest. In each case the mileage given is for the type of travel most generally used—road (H), rail (R), air (A) or water (W); air milages are given for most transcontinental distances. Water routes are given in nautical miles.

From	To	Halifax	Montreal	Quebec	Ottawa	Toronto	Winnipeg	Edmon- ton	Van- couver
		miles	miles	miles	miles	miles	miles	miles	miles
St. John's, Nfld.	W	531	W 1,043	W 904	—	W 1,336	—	—	A 3,955
Charlottetown, P.E.I.	H	165	—	—	—	—	—	—	—
Halifax, N.S.	—	—	H 860	H 759	—	H 1,210	—	—	A 3,232
Fredericton, N.B.	H	329	H 531	H 366	—	—	—	—	—
Saint John, N.B.	H	296	H 624	H 459	H 748	H 974	—	—	—
Chibougamau, Que.	—	—	—	R 608	—	—	—	—	—
Montreal, Que.	R	840	—	H 165	H 124	H 350	A 1,419	A 2,225	A 2,668
Quebec, Que.	—	—	H 165	—	H 289	H 515	A 1,436	—	A 2,814
Schefferville, Que.	—	—	R 357	R 357	—	—	—	—	—
Sept Îles, Que.	—	—	W 430	W 291	—	—	—	—	—
Fort William, Ont.	—	—	W 430	W 291	—	—	—	—	—
Hamilton, Ont.	—	—	W 1,055	W 1,194	R 878	W 762	R 419	R 1,219	R 1,892
Ottawa, Ont.	—	—	H 394	H 559	H 303	H 44	—	—	—
Sudbury, Ont.	—	—	H 124	H 289	—	H 259	A 1,325	A 2,131	A 2,574
Toronto, Ont.	—	—	—	—	H 313	H 234	R 945	—	—
Churchill, Man.	W 1,188 ¹	H 350	H 515	H 259	—	—	A 957	A 1,748	A 2,360
Lynn Lake, Man.	—	—	—	—	—	—	R 992	—	—
Winnipeg, Man.	—	—	—	—	—	—	R 723	—	—
Regina, Sask.	—	—	—	—	—	A 957	—	R 800	R 1,473
Saskatoon, Sask.	—	R 1,764	—	—	R 1,653	R 1,587	R 356	R 512	R 1,117
Uranium City, Sask.	—	—	—	—	—	—	R 470	R 330	R 1,096
Calgary, Alta.	—	—	—	—	—	—	A 456	A 492	A 992
Edmonton, Alta.	—	—	—	—	—	R 2,063	R 832	R 194	R 641
Fort St. John, B.C.	—	R 2,159	—	—	R 2,041	R 2,007	R 800	—	R 765
Kitimat, B.C.	—	—	—	—	—	—	—	A 371	R 728
Prince Rupert, B.C.	—	—	—	—	—	—	—	R 956	W 420
Vancouver, B.C.	A 3,232	A 2,668	R 3,042	R 2,770	A 2,360	A 1,403	R 765	—	W 477
Victoria, B.C.	A 3,279	—	—	—	—	—	—	—	—
Dawson, Y.T.	—	—	—	—	—	—	—	—	W 81
Whitehorse, Y.T.	—	—	—	—	—	—	A 1,058	A 316	A 615
Frobisher, N.W.T.	—	—	—	—	—	—	—	H 1,287	A 1,056
Inuvik, N.W.T.	—	A 1,297	—	—	—	—	—	A 3,522	A 3,965
Yellowknife, N.W.T.	—	A 3,543	—	—	—	—	A 2,140	A 1,318	A 1,854
							A 1,398	A 656	A 1,192

¹ Via Strait of Canso.

The length of Canada's southern border adjoining the United States is 3,986.8 miles and the length of the Yukon-British Columbia border adjoining Alaska is 1,539.8 miles.

Section 1.—Physical Geography

Subsection 1.—Main Physical and Economic Features of the Provinces and Territories

Politically, Canada is divided into ten provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources, and upon such resources, as related to topography, position and climate, is based the economy of the province. The resources of the Yukon and Northwest Territories, because of the remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the Federal Government.

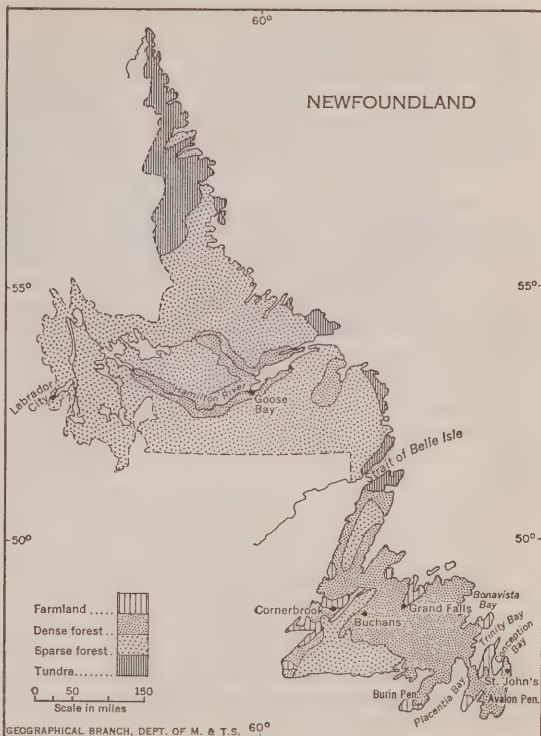
The main physical and economic characteristics of each province and territory are described in the following paragraphs. However, it should be mentioned that the economic development of the country as a whole, based in the first instance on physical features and later on other factors, has formed regions quite distinct from the political divisions. These economic regions are described in an article appearing in the 1962 Year Book at pp. 17-23. It should also perhaps be noted that physical features and natural resources influence economic development only up to a point. In a pioneer area and as long as that area is dependent upon primary resources this is the case but as growth continues and industry develops and diversifies, as the problems of transportation and communication are mitigated and public services become increasingly important, the dependence shifts to demand and markets and large agglomerations of population become magnets drawing unto themselves with less and less relation to the geography of their location. This has become particularly true of the heavily populated areas of southwestern Ontario and southeastern Quebec and to a lesser extent of other urban centres across the land.

Newfoundland.—Newfoundland, Canada's most easterly province, has a total area of 156,185 sq. miles. The larger part of this area, 112,826 sq. miles, known as the Coast of Labrador, is on the mainland and is separated from the Island of Newfoundland at the narrowest point by the Strait of Belle Isle. Labrador is a roughly triangular area bordering the north Atlantic Coast from the Strait of Belle Isle to Ungava Bay, its rounded apex extending inland about 450 miles. The surface of this remote region is mostly a barren mosaic of rocks, swamps and lakes; its rugged coastline has promontories rising up to 3,000 feet directly from the sea and the extreme northern area is dominated by the Torngat Mountains, summits of which rise to over 5,000 feet. Although it lies in the same latitude as Britain, Labrador has an extremely rigorous climate and is usually snow-covered for more than half the year. Many of its river valleys are well forested, the accessible timber stand being estimated at 6,755,000,000 cu. feet, its rivers, particularly the Hamilton, have numerous falls suitable for the development of hydro power, and its coastal waters abound in fish which, until recently, were its most valuable resource. However, the great mineral potential of its Precambrian rocks is beginning to be exploited and iron ore is now Labrador's greatest source of wealth. The high-grade hematite deposits on the Labrador-Quebec boundary near the headwaters of the Hamilton River account for almost half the Canadian shipments of iron ore and the nearby Wabush Lake area, now under development, will greatly increase this production. To serve the latter, the first use of Labrador's hydro-power potential has been made by the installation of a 120,000-hp. plant on the Unknown River. Labrador in 1961 had a population of only 13,500, about half of whom were located in the area of Goose Bay, a Royal Canadian Air Force station. Close to 800 were in the new townsite of Labrador City at Wabush Lake and the remainder were scattered along the coast, supporting themselves by fishing and hunting. Indians and Eskimos numbered about 1,200.

The Island of Newfoundland, an area of 43,359 sq. miles, is also triangular in shape, each side being about 320 miles long. Its northwestern point is only a few miles from the mainland of Labrador and the distance from its southwestern tip across Cabot Strait to Cape Breton Island is 70 miles. The topography of the Island is quite rugged but there are no areas of great relief except the Long Range which parallels the western coast and rises to heights of over 2,600 feet. The main physiographic features are determined by a series of very old, worn-down fold-ridges with axes trending northeast to southwest. As in Labrador, much of the surface is barren and rocky and has innumerable ponds and swamps, the drainage having been deranged in the last glaciation. The climate of the Island is marine in

character, although the moderating influence of the sea is affected by the cold waters of the Labrador current which sweep along the east and west coasts. Summers are cool and winters relatively mild.

The economy of this portion of the province is also based on forest, fish and mineral resources. Agriculture at present is of only local importance, but it is now considered that Newfoundland's millions of acres of bogland are a potential avenue of expansion for the agricultural industry; with special treatment, these peat lands are capable of producing high yields of most vegetables. The river valleys of the interior and the west coast are thickly forested and support a thriving pulp and paper industry. The deeply indented coastline provides many harbours for hundreds of fishing craft. Modern trawlers and draggers operating out of ports along the southern coast fish the prolific cod banks in all seasons of the year but the summer inshore trap fishery from small boats is equally important. The Island also has extensive mineral deposits, of which iron ore is the most valuable. The huge Wabana deposits of medium-grade ore on Bell Island in Conception Bay account for about 12 p.c. of the Canadian output; substantial quantities of lead-zinc-copper ore are mined at Buchans in the interior; and the major part of Canada's production of fluorspar comes from the Burin Peninsula.

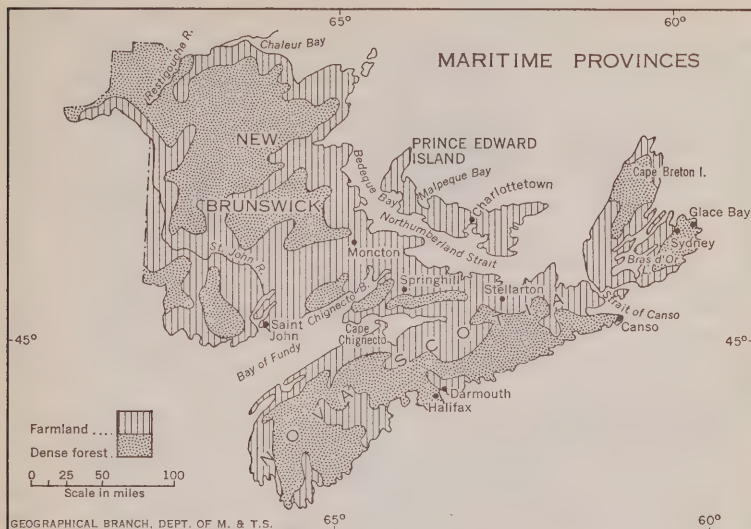


The Island in 1961 had a population of 444,319, close to 40 p.c. of whom resided on the Avalon Peninsula and on the eastern shores of Placentia and Trinity Bays which separate the peninsula from the Island and around Bonavista Bay immediately to the north. The capital city of St. John's, situated on the east coast of the peninsula, had, with its environs, a population of 90,838 and the other important urban areas were Corner Brook on the west coast and Grand Falls in the north, both pulp and paper centres. The remainder of the people live in small groups along the coasts and depend mostly on the sea for their livelihood and for contact with other communities and the outside world.

Nova Scotia.—Nova Scotia may be described as a peninsula, 381 miles in length and from 50 to 105 miles in width—an area of 21,425 sq. miles almost surrounded by the waters of the Bay of Fundy, the Atlantic Ocean, the Gulf of St. Lawrence and Northumberland Strait. Midway along its western boundary it is connected with the Province of New Brunswick by the Isthmus of Chignecto, a neck of land about 15 miles across. The northeastern portion of the province, an area of 3,975 sq. miles known as Cape Breton Island, is separated from the mainland by the narrow Strait of Canso, now traversed by a permanent causeway. The Island is itself almost bisected from northeast to southwest by the salt water Bras d'Or Lakes, and consists mainly of a wooded upland rising in the north to a height of 1,747 feet, the highest point in the province. Most of the mainland is of low relief. Ridges not exceeding an altitude of 1,000 feet run through the centre of the province and there is an upland surface known as the Cobequid Mountains running east and west to the north of the Bay of Fundy, this upland being about 900 feet high, from eight to 12 miles wide and 85 miles long; a few low rounded remnants rise to 1,000 or 1,100 feet. Although the climate of Nova Scotia is continental rather than marine, the temperatures both summer and winter are more moderate than in interior continental areas in the same latitude and the seasons somewhat later. Winters are particularly stormy on the Atlantic Coast and fog is prevalent throughout the year. The Atlantic side of the province is generally rocky and deeply indented with bays and inlets providing many excellent harbours. Trawlers and dragners operating from these harbours supply cod and other groundfish to the processing plants in their home ports and smaller vessels fishing the inshore waters, both on the Atlantic Coast and in the Bay of Fundy, harvest large quantities of pelagic and estuarial species. Lobster has become the most valuable of Nova Scotia's sea products; most of the catch is marketed alive or as chilled or frozen lobster meat, and the remainder is canned. There are 42 plants in the province producing frozen fish products.

The slopes of the Bay of Fundy and Northumberland Strait, protected from Atlantic storms, are the main agricultural areas of the province. The climate is suitable for dairy, poultry and mixed farming and, in some sections, fruit growing; strawberries and blueberries are the principal small fruits produced. The Annapolis Valley, along the coast of the Bay of Fundy, is internationally known for its apple orchards and some 44,000 acres of fertile tidal marshland have been added to this area by protection from saltwater flooding. Elsewhere in the province agriculture is patchy and often a part-time occupation.

Mineral resources include coal, gypsum and salt. Nova Scotia is a leading producer of good bituminous coal suitable for the production of coke and excellent for domestic use, although recently the demand for coal has been declining and the coal-producing areas, particularly Springhill and Stellarton, have been hard hit economically. The large steel mills of Glace Bay were established there to make use of the coal available in that area and the iron ore easily transportable by water across the Cabot Strait from the Wabana mines of Newfoundland. Large gypsum deposits in the central area provide over 82 p.c. of Canada's output of this mineral and the construction of the Canso Causeway created an ice-free harbour at Point Tupper and thus facilitated the exploitation of other large gypsum deposits at Denys Station on Cape Breton Island. Quantities of rock salt are mined on the northwest mainland. The forested area of the province is proportionately very large and most of it is regarded as productive. The output of the 500 sawmills of all sizes is most



important, and the province has two pulp mills and two paper mills in operation. On these resources are based the leading manufacturing industries of Nova Scotia, although recently secondary industries are becoming more diversified.

Just over half of the people of Nova Scotia, who number 737,000, are classed by the census as urban dwellers. However, since 40 p.c. of the total live in the two large urban areas of Halifax-Dartmouth and Sydney-Glace Bay, the province has the appearance of being mainly rural, with about 46 p.c. of the population living in small towns and villages or on farms. Halifax, a metropolitan area of 183,946 people, is situated on one of the best land-locked harbours in the world.

New Brunswick.—New Brunswick is nearly rectangular in shape and has an area of 28,354 sq. miles. The Bay of Chaleur cutting about 100 miles inland on the north, the Gulf of St. Lawrence and Northumberland Strait on the east, the Bay of Fundy on the south and Passamaquoddy Bay on the southwest give the province a very extensive seacoast. It adjoins the United States on the west and the Province of Quebec on the north and northwest.

The surface of New Brunswick is mostly undulating. The great Northwestern Plateau, 1,000 to 1,500 feet above sea level, is deeply dissected by valleys tributary to the St. John River which flows generally southward across the whole province to the Bay of Fundy and to the Restigouche River which flows eastward, emptying into the Bay of Chaleur. The Central Highlands consist of a dissected plateau about 2,000 feet above sea level, surmounted by numerous monadnocks, the highest of which is Mount Carleton (2,690 feet). Many river valleys have deeply trenched the plateau to a depth of 1,000 or more feet below the summit level. In the south an upland area of widely separated fold ridges provides lesser relief. The valley of the St. John River is the major lowland area. The climate of this province, although typically continental rather than marine, also reflects the moderating influence of the sea. As in Nova Scotia, the seasons are somewhat delayed and temperatures in the interior are more extreme than on the coasts.

The interior of New Brunswick is very heavily forested. In fact, 86 p.c. of the total land area is classed as productive forest land and three quarters of the merchantable wood is made up of coniferous species. It is mainly upon these great stands of timber and the existence of the many fast-flowing rivers providing easy transportation for the logs to the mills or to tide-water that the economy of the province has been built. Four pulp mills, three pulp and paper mills and one paper-converting mill are in operation and their output, together with that of the 300 sawmills, makes up more than a third of the manufacturing production of the province. The rivers provide moderate-sized power sites advantageously situated to meet local requirements and many of these have been developed. The St. John River Valley and the northwestern part of the province are the agricultural areas, the former specializing in potato and livestock production and the latter containing fairly large mixed-produce farms. In the northeast and along the coastal fringe, part-time agriculture is often combined with fishing and/or lumbering for a livelihood. Fishing, too, is well developed, inshore fisheries being of greater importance than offshore. Lobster from Northumberland Strait is the major money-maker, followed by herring from the Bay of Fundy and then cod. The mineral resources of the province are not extensive. They include moderate amounts of coal, natural gas and petroleum. Shipments of ore and concentrates containing copper, lead and zinc have recently been made from base-metal mines in the northern area.

In 1961, 597,936 people lived in New Brunswick, 10 p.c. of them on farms, 43 p.c. in small centres of fewer than 1,000 persons, and the remainder in urban centres. The metropolitan area of Saint John, which is situated at the mouth of the St. John River and is the principal port and industrial centre of the province, had 95,563 residents. Most of the population of the province is located fairly close to the coastal areas, along the St. John River Valley which is near the western boundary, and in the lower-lying eastern portion. The interior is very sparsely inhabited.

Prince Edward Island.—This, the smallest province of Canada, is a separate land mass cradled in the Gulf of St. Lawrence, 10 to 20 miles off the mainland east of New Brunswick and north of Nova Scotia. The waters separating it from these provinces are known as the Northumberland Strait. The Island has an area of 2,184 sq. miles, varies greatly in width from about four to 40 miles and is 140 miles long. It has no pronounced upland but attains an altitude of about 450 feet above sea level. The coast is greatly indented and has many bays and inlets running far inland in every direction. In fact, the Island is almost trisected by the indentation of Tracadie Bay on the north which almost meets the wide East River flowing into Hillsborough Bay on the south, and by the deep indentation of Malpeque Bay on the north curving within two or three miles of Bedeque Bay on the south. Because of the influence of the sea, the climate is quite moderate although occasional extreme lows may be experienced in winter. The Island enjoys a frost-free period of about five months.

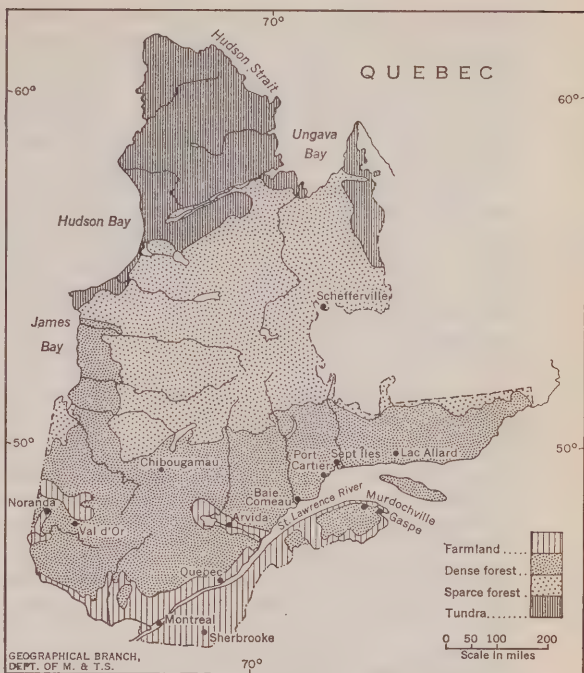
The moderate climate combined with fertile soil is very favourable to the pursuit of agriculture, which is the principal occupation of the people. Almost 70 p.c. of the land area is cultivated, the farms producing mixed grain crops and specializing in potato-growing; dairying and stock-raising are also important, and the recent establishment of large freezing plants has encouraged the growing of small fruits and vegetables and provided a new export for the Island. Prince Edward Island fishermen secure their share of lobster from the prolific waters of Northumberland Strait and this catch accounts for something like 70 p.c. of the value of the primary fishery production of the province. Groundfish and oysters, the latter mainly from Malpeque Bay, are next in importance. The major manufacturing industries on the Island are based on these agricultural and fisheries resources. There are perhaps 800 sq. miles of productive forested land, the products from which are used locally. Mineral production consists solely of sand, gravel and stone for structural purposes and there is very little hydro power available.

Prince Edward Island had, in 1961, a population of 104,629, of whom 70,720 were classed as rural residents. Charlottetown, with 18,318 persons, is the only city; seven towns and 17 villages account for the other urban dwellers.

Quebec.—Quebec is the largest province in Canada, its area of 594,860 sq. miles being approximately 15 p.c. of the total area of the country. It includes all that vast region lying north and west of the St. Lawrence River and Gulf as far as the shores of Hudson Strait and Bay and a line running due south of the tip of James Bay for a distance of 300 miles; it is bounded on the southwest by the Ottawa River and on the northeast by the Coast of Labrador. South of the St. Lawrence is a strip of land approximately 30 to 100 miles in width, known as the Eastern Townships and the Gaspé Peninsula, the former adjoining United States territory and the latter the Province of New Brunswick. From its southernmost point on the United States boundary to its northernmost point on Hudson Strait the distance is about 1,200 miles.

Because of its geographical position, large area and complex physiographic relations, Quebec has a wide variety of climates. In the lower St. Lawrence Valley the frost-free season is fairly long, extending from early May to late September. Summers are warm with hot humid spells and the average temperature in winter is 15° F. Moving northward and westward, winter temperatures become more extreme and the summers generally cooler while in the far north the highlands are bitterly cold in winter and practically summerless.

Physiographically, Quebec has three regions. The Canadian Shield occupies the greater part of the area north of the St. Lawrence. These plateau-like highlands, made up of a great mass of very ancient and mainly very hard rocks, present a rough, broken surface strewn with lakes and varying in height from 1,000 to 3,000 feet above sea level, with a few higher peaks. The height of land is in the north-centre of the province and over its broken southern rim tumble the many great rivers tributary to the St. Lawrence. The Appalachian Mountains extend through the area of Quebec south of the St. Lawrence, reaching their greatest width in the Eastern Townships and their greatest heights in the Gaspé Peninsula where the Shickshock Mountains have many summits over 3,500 feet; Mount Jacques Cartier, the highest mountain in Quebec, rises to 4,160 feet. The smallest region of the province is the St. Lawrence Lowlands, a triangular area bounded by the edge of the Canadian Shield on the northwest, the Great Champlain Fault bordering the Appalachian Highlands to the east and the Adirondack Mountains in the United States to the south. This is a low, flat region covered by deep clay deposited when the area was invaded by the Champlain Sea after the melting of Pleistocene ice. It is this fertile agricultural area that provided the basis of the economy of the province. It is here that



the mainly rural people for generations gained their livelihood from the land and it is here that industry became established and prospered, making Quebec the second largest industrial province of Canada. In 1961, of the 5,259,211 people residing in Quebec, 75 p.c. lived in the St. Lawrence Lowlands and the Eastern Townships; 3,906,404 persons were classed as urban dwellers. Although now far out-ranked by manufacturing as an employer of labour, agriculture is still a fundamental way of life and the production of animal feed crops, potatoes, market garden produce, fluid milk, cheese, hogs, tobacco and maple products is important to the large consumer market.

The great Canadian Shield area, which was long considered an inaccessible wasteland, has become the keystone of industry in Quebec. Its vast forest resources were the first to be utilized and the province is now Canada's major producer of pulp and paper; its paper output amounts to about 45 p.c. of the country's total and the value of its sawmill products is higher than that of any other province except British Columbia. The many rivers rushing down to the St. Lawrence from the edge of the Shield and the St. Lawrence River itself have made Quebec the richest province in terms of water power resources, having more than 30 p.c. of the total recorded for Canada, and its present installation of hydro power represents close to half of the Canadian total. The availability of large quantities of cheap hydro power has encouraged the development of large industrial plants in the Quebec hinterland, notable among them being the huge aluminum smelting and refining plants at Arvida on the Saguenay River and at Baie Comeau at the mouth of the Manicouagan River. The Shield's mineral potential is well known. Quebec has long been a major producer of copper, gold and zinc from the Noranda-Val d'Or area south and east of James Bay and more recently of copper and gold from the Chibougamau area farther east. Copper mineralization has also been discovered in other areas of central Quebec and a number of development programs have been started. Rapid progress has been made in the development of the huge deposits of hematite and other iron ores on the Quebec-Labrador boundary which are now being transported by rail to the ports of Sept Îles and Port Cartier at the rate of 10,000,000 tons annually. At Allard Lake about 150 miles east of Sept Îles and fairly close to the coast, large deposits of ilmenite, an ore of titanium and iron, are being mined. Of current interest is a large asbestos orebody recently discovered in the Ungava district, near Deception Bay off Hudson Strait, which is now undergoing detailed engineering and feasibility studies. The Appalachian Highlands also contain minerals which are a valuable source of wealth. Twelve mines in the Eastern Townships account for 90 p.c. of Canada's large output of asbestos, and copper is mined at Murdochville in the Gaspé Peninsula and is in evidence in the Sherbrooke area of the Eastern Townships.

Quebec has experienced great industrial expansion in the past decade and a half, much of it based directly on its own resources, although there are many highly developed industries the raw materials for which are not indigenous to the province, such as the textile and clothing industries, the petrochemical industries and the aluminum smelting industry; Quebec's manufacturing output represents about 30 p.c. of the total for Canada. Montreal, the province's largest city, is also the largest city in Canada and one of the great industrial, commercial and financial centres of the Continent—the metropolitan area had a population of 2,109,509 in 1961. Quebec, the capital of the province, had 171,979 residents and Sherbrooke, the third largest city, 66,554 residents.

Ontario.—Ontario has an area of 412,582 sq. miles and lies between Quebec on the east and Manitoba on the west. Although usually regarded as an inland province, its southern boundary has a freshwater shoreline of 2,362 miles on the Great Lakes and its northern limits have a saltwater shoreline of 680 miles on Hudson and James Bays.

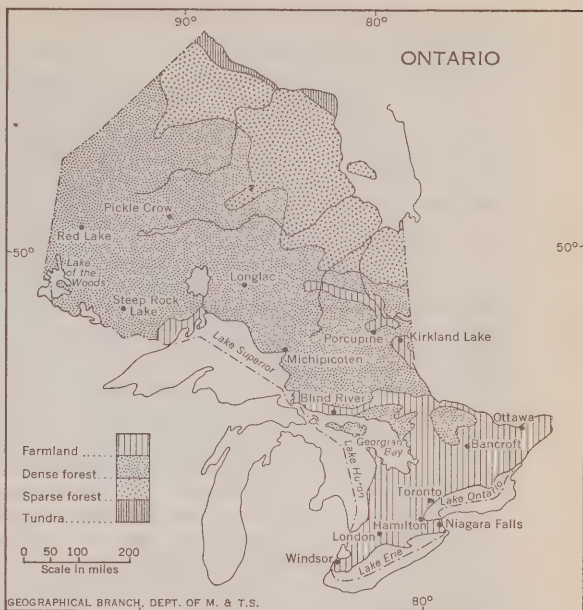
Geologically, Ontario belongs to two major regions—the rough Canadian Shield in the north and the gentler lowlands of the Great Lakes-St. Lawrence region. Northward from the Great Lakes and westward to the Manitoba boundary are approximately 300,000 sq. miles of typically Canadian Shield terrain—a rugged, rocky plateau, mostly 1,500 feet above sea level, strewn with lakes and muskeg—a difficult surface over which ground

transportation routes have been constructed only with the greatest effort. Although railways have crossed this area for more than half a century, it is only with the recent completion of the Trans-Canada Highway that it has been possible to cross it by motor vehicle. The highest point in Ontario is 2,120 feet, on the promontory on the northeastern corner of Lake Superior. From the height of land, which lies in a wide crescent north of Lake Superior, extending westward to the Lake of the Woods and eastward to Kirkland Lake, the slope descends very gently to James and Hudson Bays where a large marginal strip (the Hudson Bay Lowlands) is less than 500 feet above sea level. This northern area bears the brunt of severe winter cold waves moving eastward from the prairies or southward from the Arctic across Hudson Bay with little

or no modification, and thus experiences very cold winters. Although summers are warm they are short. In the districts immediately along the north shores of the Great Lakes and west of the Lakes there are frost-free periods in excess of 100 days but elsewhere seasons free from frost range from 40 to 100 days.

The lowlands region, which extends over the whole of the southern peninsula between Lakes Ontario, Erie and Huron, and eastward to the Ottawa River adjoining the lowlands of Quebec, is about one sixth the size of northern Ontario. Common to this region are such glacial features as rock plains, morainic hills, till plains, clay plains, drumlins and sand plains. The southwestern tip of the province extends farther south than any other part of Canada. This fact, combined with the ameliorating influence of the lower Great Lakes, gives peninsular Ontario a much milder climate than that of the northern districts. Since it lies in one of the major storm tracks of the Continent, wide variations occur in day-to-day weather, especially in winter, but conditions of severe cold or excessive warmth are not prolonged.

This lowlands area of Ontario is the most densely populated and highly industrialized area of Canada. The population of the province numbered 6,236,092 in 1961, approximately 35 p.c. of the total population of the country, and of that number 5,347,205 lived in the peninsular area. Favourable climatic conditions, fertile soil, ease of travel over relatively unobstructed terrain as well as over the natural transportation routes of the St. Lawrence River and the Great Lakes influenced the populating of this area. Agriculture became well established and continues to be of major importance to the economy of the province. In fact, with the exception of the great wheat-growing areas of the west, it is by far the most highly productive agricultural area in the country. Its produce is very diversified and many specialized areas have developed—fruit in the Niagara district,



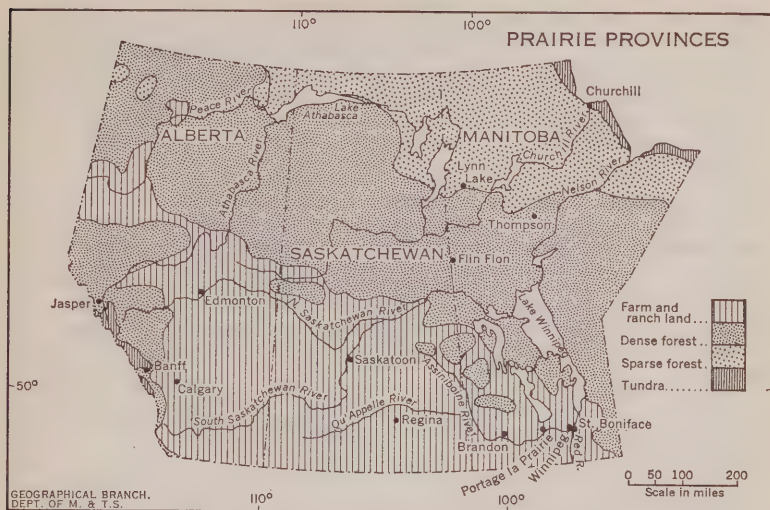
tobacco in the counties adjacent to Lake Erie, commercial vegetables north of Toronto and cattle in the Georgian Bay area. However, important as agriculture may still be, the early colonial settlements along the waterways and in the interior of this area have grown rapidly and have become highly industrialized. It may be said that the industries of southern Ontario produce almost every type of product required by the consuming public and the area is now one of the great industrial agglomerations in the world. The focal point of this industrial area is the city of Toronto which is the second largest city in Canada and a major manufacturing, financial, commercial and distribution centre. In 1961, it had, with its environs, a population of 1,824,481 and the nearby metropolitan area of Hamilton, whose basic industry is steel, had a population of 395,189.

Although the northern regions of Ontario are thinly inhabited and support only 14 p.c. of the population, their contribution to the industrial output of the province is large. The Ontario portion of the Canadian Shield has long been a producer of many base metals and accounts for close to 40 p.c. of the total mineral output of Canada. About 85 p.c. of Canada's tremendous output of nickel and about half the copper come from the Sudbury area, close to 60 p.c. of the production of gold comes from the Kirkland Lake-Porcupine area and from the Red Lake, Pickle Crow and Little Long Lake areas farther west and about a quarter of the iron ore from the Steep Rock Lake area west of Lake Superior and the Michipicoten area on the northeastern shore of the Lake. Most of the uranium production now comes from the Blind River area north of Lake Huron and Bancroft east of Georgian Bay. The Lowlands area of the province produces quantities of industrial minerals such as salt, asbestos and nepheline syenite and has some natural gas and petroleum output. Production of structural materials such as cement, sand and gravel and stone, which is dependent on construction activity, has been exceptionally high in recent years.

Ontario has about 262,000 sq. miles of forested land which supports a thriving pulp and paper industry. The province produces close to 30 p.c. of the paper output of the country; lumber and other sawmill products are of lesser importance. Ontario follows Quebec and British Columbia in magnitude of water power resources and is second to Quebec in installed hydro-electric capacity. The largest power development, having a capacity of 2,521,000 hp., is located on the Niagara River. Recently, the development of water power sites in the province has progressed at a formidable rate and most of those remaining undeveloped are located in areas relatively distant from power markets, so that the province is now increasing its emphasis on thermal power development.

Manitoba.—Manitoba is the most central of Canada's provinces and is the most easterly of what are known as the three Prairie Provinces although by far the largest part of its 251,000 sq. miles is within the Canadian Shield. The province is thus divided into two distinctly topographic forms, the demarcation line beginning close to the southeast boundary and running diagonally northwest through Lake Winnipeg to the Saskatchewan border, at a point a little beyond the 55th parallel of latitude. The larger northern area, with the exception of the lowland south of Hudson Bay, is typically Shield with heavily glaciated topography and deranged drainage, its major rivers, the Churchill and the Nelson, flowing into Hudson Bay. The southwestern portion is the first and lowest of three broad step-like formations across the northern portion of the great central plains of the Continent. It has an elevation of from 600 to 700 feet and is floored by deep fertile clay soils left by glacial lakes that once covered the area. It is separated from the Saskatchewan Plain, the second plain formation, along its western boundary by the Manitoba Escarpment, a narrow belt of hilly terrain with elevations of from 1,600 to 2,727 feet. The highest points are Duck, Porcupine and Riding Mountains with elevations of 2,727, 2700, and 2,000 feet, respectively.

Manitoba, in common with the other Prairie Provinces, has a continental climate. Summers are normally warm and winters long and intensely cold. Consequently, there is a wide range between the temperatures of the warmest and the coldest months, running at about 70° in southern Manitoba. The growing season in the agricultural area to the southwest extends from late May to mid-September, with a frost-free period of about 100 days. In the Duck and Riding Mountains the frost-free period is under 100 days and in



the extreme north from 60 to 90 days. Manitoba is the most favoured of the Prairie Provinces in amount of rainfall, which averages 22 inches a year in the inter-lake section and comes during the crop season when it can be best utilized.

Manitoba's economy has been built on its agricultural resources. Nearly 80 p.c. of its population lives in the arable area south of Lake Winnipeg and Lake Manitoba and within 100 miles of the southern boundary of the province; 36 p.c. are classed as rural dwellers. Wheat and other grain crops are of major importance but mixed farming operations with emphasis on livestock are more prevalent here than in the other Prairie Provinces. The lowland area also has some mineral deposits and yields moderate amounts of crude petroleum, salt, peat moss and gypsum, but it is the great northern area with its Precambrian rocks that contains most of the mineral wealth of the province. Noteworthy is the production from the large copper-zinc deposits at Flin Flon on the Manitoba-Saskatchewan border, from the nickel-copper deposits at Lynn Lake 150 miles farther north, and from the new nickel development at Thompson in the central north, which came into production in mid-1961.

Manitoba has the greatest water power potential of the three Prairie Provinces. The heavily populated southern region is well supplied from hydro installations on the Winnipeg River and the northern resources are being developed gradually as demand for power increases in the mining areas. The northern areas also are well forested but much of the productive forest land is remote so that the forest industries, though important, are not highly developed. There are three moderate-sized pulp and paper mills in the province and several paper-converting establishments. In addition, Manitoba has valuable fisheries resources. The profusion of lakes and streams, particularly Lake Winnipeg, produces many varieties of commercial fish which are in demand on the United States market.

Winnipeg, Manitoba's capital and largest city, is the fourth largest in Canada, having, with its environs, a population of 475,989 in 1961. In the mid-1800's this city, situated at the confluence of the Red and Assiniboine Rivers, was the hub of traffic which converged on it from the east and fanned out westward. Its industries developed around its agricultural resources and its importance as a railway and distribution centre and today,

although it has a wide diversity of manufacturing products, the food processing industries remain in first place and railway rolling-stock and other metal-using establishments rank high among its industries. Outside the metropolitan area of Winnipeg the province has only two cities, with populations of 12,000 and 28,000, both of which are in the southern area. In the north, Churchill, at the end of rail on Hudson Bay, is a deepsea port from which some wheat is shipped across the Atlantic; Fort Churchill, close by, is perhaps most noted as a military station and a base for Arctic research and has a larger but transient population.

Saskatchewan.—Saskatchewan has an area of 251,700 sq. miles, approximately the same as that of Manitoba. The demarcation line between the lowlands to the south and the Canadian Shield, which crosses into Saskatchewan about the 55th parallel, continues northwest across the province although it becomes less sharply defined. Thus the southern two thirds is prairie lowland. The second step of the prairie formation stretches westward from the Manitoba Escarpment at an average altitude of 2,000 feet, its surface, covered with deep fertile soil, being exceptionally flat in some areas but elsewhere hummocky with innumerable sloughs. Another great scarp occurs about 200 miles to the west, a continuation of the Missouri Coteau which is well-marked south of the border, and west of this extends the highest of the prairie steps with an altitude of from 3,000 to 4,300 feet; in the south the Cypress Hills rise above this level. Cutting across the centre of the lowland area are the great arms of the Saskatchewan River which flow from the Rocky Mountains to Lake Winnipeg.

This prairie lowland is the great grain-producing region of Canada. Throughout most of it the growing season ranges from 80 to 100 days and the average amount of sunshine is particularly high. On the other hand, precipitation amounts to less than 20 inches a year and the area is subject to violent storms, sometimes constituting hazards to the farmer. Saskatchewan nevertheless produces about two thirds of the wheat grown in the country as well as very substantial quantities of oats and other grains. Mixed farming, with emphasis on livestock, is more prevalent in the more northerly settled areas.

Approximately half the net value of production of the province is contributed by agriculture and upon agriculture are based the main manufacturing industries. However, the most important industry in point of value is petroleum refining. The southern plains of this province produce about a quarter of Canada's crude petroleum, moderate amounts of natural gas and large quantities of coal, salt and sodium sulphate, but the greatest mineral wealth in this area will come from what is believed to be the world's largest high-grade deposit of potash which occurs at depths of from 2,800 to 3,500 feet under a large part of southern Saskatchewan. The first shipments from this deposit, which was under development for several years, were made in 1959; shipments then ceased because of production problems but resumed on a continuing basis in 1962. Metal production includes substantial quantities of copper and zinc from the Flin Flon mines straddling the Manitoba-Saskatchewan boundary in the north, which also yield moderate amounts of gold, silver, cadmium, selenium and tellurium. But in recent years the most important of the province's metals in value is the uranium taken from the large vein-type deposits on the north shore of Lake Athabasca, close to the Northwest Territories boundary.

The forests of Saskatchewan are mainly in the northern half of the province and, while they cover an area of 118,000 sq. miles, only 41,000 sq. miles are considered productive. Lumber output therefore is light and one mill contributes to Canada's production of pulp and paper. Existing hydro-electric plants are also located in the northern areas and their output is used almost exclusively for mining purposes. The major part of the province's power requirements is supplied by thermal-electric plants fuelled with coal, oil and natural gas.

Saskatchewan had a population of 925,181 in 1961 of whom 57 p.c. were rural dwellers. The urban centres, of which Regina and Saskatoon are the largest, are well dispersed over the prairie lands and serve mainly as distributing centres for their surrounding areas. Regina, the capital, in 1961 had a population of 112,141 and Saskatoon 95,526.

Alberta.—Most of Alberta's 255,285 sq. miles lie in the interior plains region. The southern part is dry, treeless prairie changing toward the north into a zone of poplar interspersed with open prairie and giving way to mixed forests.

The boundary of the province follows the 49th parallel as does that of Saskatchewan and Manitoba, but only for a distance of about 180 miles before it strikes northwestward following the ridge of the Rocky Mountains to a point close to the 55th parallel and then turns directly north. From the Saskatchewan border in the southern area the plain rises gradually from about 2,500 feet above sea level to nearly 4,000 feet as it merges into the foothills of the Rocky Mountains. This foothill area is part of the Western Cordilleran Region. The Alberta Rockies have numerous peaks of from 10,000 to 12,294 feet, all of them close to or on the British Columbia boundary.

The southern half of the province is subject in winter to cold dry air masses of continental polar air, moderated from time to time by the Chinook winds. Summers are warm with abundant sunshine but rainfall is meagre, particularly in the southwest, and is extremely variable with periodic droughts. In areas where precipitation is more precarious, large irrigation projects have been developed, taking their water supply from the rivers rising in the mountains to the west. There are altogether over half a million acres of irrigated land in Alberta.

Thus, while the prairie wheat-growing belt extends into central Alberta and this province is the second largest producer of wheat in Canada, its agricultural output is quite diversified. Cattle-raising is more important here than elsewhere on the prairies and is highly developed in the Rocky Mountain foothills, in the Cypress Hills area of the southeast and in the northern prairie region. Feed crops, vegetables and root crops are grown in the irrigated areas. It is noteworthy that permanent agricultural settlement reaches its farthest northern point in Canada in the Peace River Valley of northwestern Alberta. Although the frost-free period in this area is only about 80 days, crops are able to mature because of the long hours of daylight during the growing season.

The prairies of Canada are underlain by fuel-bearing rocks but it is in Alberta that they have become particularly productive. Coal has long been mined in many areas but while these resources continue to be productive, they are becoming less important with the development of the huge oil and gas resources of the central interior. The production from these oil and gas fields has changed the economy of this province in the past 15 years and contributed immeasurably to its activity and growth. Agriculture-based products still rank high among its manufactures but the recent emphasis has been on manufactures connected with the oil and gas industries. Industrial chemicals have made striking gains as have structural materials, the latter in consequence of the tremendous construction that has taken place in the province and elsewhere. Alberta's forests also contribute to its manufacturing output. The province has 52,569,000,000 cu. feet of accessible standing timber, almost equal to that of Quebec. The foothills of the Rockies are particularly heavily forested but lumbering is not as yet highly developed. Water power resources exist in the northern areas but are somewhat remote and present demand for electric power is supplied mainly by thermal plants.

The population of Alberta, which numbered 1,331,944 in 1961, is concentrated in the central southern portion. The metropolitan areas of Edmonton and Calgary, both situated in the oil and gas producing areas, had populations of 337,568 and 279,062, respectively, and thus contained between them 73 p.c. of the urban population of the province. About 37 p.c. of the total population is classed as rural.

British Columbia.—British Columbia, Canada's third largest and most westerly province, has an area of 366,255 sq. miles. It consists almost completely of a portion of the great Cordilleran system of mountains that border the Pacific Coast of South, Central and North America. Only in the northeastern corner does the interior plain region intrude. This mountainous area is made up of three parallel ranges resulting in a set of parallel linear valleys, and each range has distinctive traits.

The Rocky Mountains form the eastern frontier of the Cordillera. They present a continuous range of high wall-like ridges, cut up by glaciation into sharp peaks, knife-like edges and deep hollows, a range averaging 50 miles in width in the south and 25 miles in the north. Some of the highest peaks and most beautiful scenery on the Continent are to be found in the Canadian Rockies—dazzlingly white crests topping iron-grey or yellow-red reaches of bare rock, huge scree below them with salients of dark-green forest pushing up between, narrow forested benches and deep gorges or blue-green lakes at the bottom. Many of the peaks rise to 10,000 feet or more, the highest in British Columbia being Mount Robson with an elevation of 12,972 feet. The Rockies are traversed by few passes, the most noted being Yellowhead (3,700 feet), Kicking Horse (5,388 feet) and Crowsnest (4,459 feet).

The central section is marked off from the eastern for most of its length by a sharp topographical break known as the Rocky Mountain Trench which contains the headwaters of the Kootenay, Columbia, Fraser, Peace and Liard Rivers and is one of the most remarkable of its kind. It is about 2,500 feet above sea level and averages from two to 10 miles in width for a distance of over 1,000 miles. Westward the character of the land changes considerably. On the whole, relief is lower and broader and the effects of glaciation are not as spectacular. This section consists of several ranges. Between the Cassiar Mountains in the far north and the Skeena Mountains lies the small Stikine plateau and south of the Skeena-Hazelton Ranges there opens out a wide plateau-like upland which sinks in the central part of the province to the lowlands of the Upper Fraser basin. Southward the upland is squeezed out between the Columbia and Cascade Mountains. The Columbias are a series of rather blocky massive ranges—the Cariboo, Purcell, Selkirk and Monashee Mountains—with deep troughs between in which lie the Kootenay and Arrow Lakes.

The western section consists of a triple structure made up of the Coast Range, the Inner Passage and an outer island arc. The Coast Range begins in the St. Elias Mountains of Yukon Territory. Here the loftiest peaks on the Continent, with elevations of from 18,000 to 20,000 feet, thrust up out of glistening icefields. The highest peak in British Columbia is Mount Waddington, 13,260 feet. Southward, the steep slopes of the coastal mountains are clothed with dense green forests contrasting with the steely blue of the deep fiords that pierce the shoreline. The waterways adjacent to the coast—the Georgia, Queen Charlotte and Hecate Straits—comprise the Inner Passage. This is one of the finest natural waterways in the world and provides a relatively sheltered and safe sea route from Vancouver to Alaska. The outer island arc is made up of outlying ridges that have become partially submerged under the sea, forming hilly or mountainous islands of which the Vancouver and the Queen Charlotte group are the most important. Vancouver Island has an area of 12,408 sq. miles, its surface rising steeply from a rocky coastline to heights of 7,200 feet. The Queen Charlotte mountains are lower, with individual ranges separated by deep, narrow valleys.

The climate of British Columbia is as varied as its topography, ranging from near-Mediterranean in the southwestern corner to tundra on the mountain tops. As a result of the prevailing westerly winds and the warm waters of the Pacific, the main climatic characteristics of the coastal area are mild winters, warm but not hot summers and a small range of temperature. The longest average frost-free season in Canada occurs in these areas. Inland, continentality of weather increases toward the east, with much greater ranges of temperatures and much less rainfall. In fact, in some of the plateau areas of the interior almost arid conditions occur. In the northern half of the province, the whole area is characterized by long cold winters and short cool summers with only moderate precipitation.

British Columbia's economy is based primarily on its great forest resources. The mild climate and heavy rainfall of the coastal area encourage luxuriant growth, giving this province by far the greatest amount of accessible standing timber in Canada—estimated at over 320,000,000,000 cu. feet. Thus it holds the dominant position among the provinces in the production of wood products; indeed, four of its five leading manufacturing industries

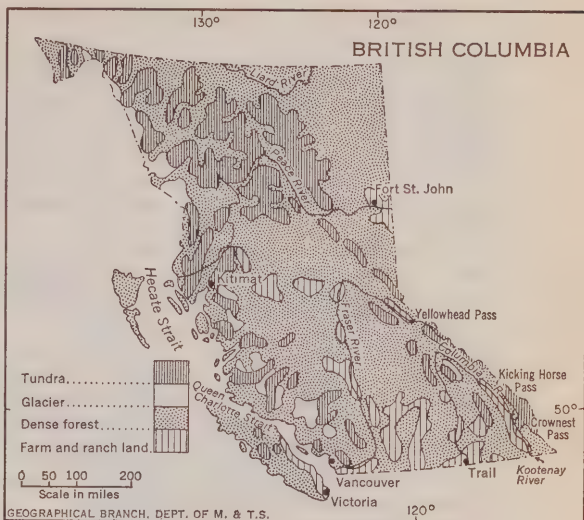
are based on forest resources—sawmills, pulp and paper mills, veneer and plywood mills and sash and door and planing mills.

The mineral resources of the province are quite diversified. The south-central area has long been famous for its large base-metal mines from which comes the country's major output of zinc and lead as well as quantities of gold, silver, antimony, cadmium, bismuth, tin, indium and tungsten. Base-metal mines also exist in the northwest and iron mines on the east coast of Vancouver Island and across the Strait on the mainland. Gypsum and barite are mined in the south-central interior, asbestos in the northern interior and coal in several areas along the eastern boundary. The most recent mineral development in the province has taken place in the Peace River district close to the Alberta boundary from which area natural gas and oil are now being shipped by pipeline to Vancouver refineries. Petroleum refining has become the province's third largest industry, using mainly crude from Alberta's wells.

The prolific waters of the Pacific provide British Columbia's fishermen with large and valuable harvests. The salmon fishery is the most important, although catches of herring are heavy. Halibut, third in importance, is taken mainly farther north. Since three quarters of the annual catch of salmon is canned and herring reaches the market in the form of oil and meal, fish processing is a major industry. Most of the halibut is sent frozen to the United States market.

British Columbia ranks third among the provinces in value of manufacturing production. Its hydro-power potential is the second greatest in Canada and its installed capacity is exceeded only by those of Ontario and Quebec. This availability of power is being instrumental in diversifying the industries of the province and in promoting the establishment of such power-using industries as the large aluminum smelting facilities at Kitimat on the northeast coast and the great smelters at Trail on the southern border.

Less than 2 p.c. of the land area of British Columbia is classed as occupied agricultural land and this occurs in the southern part of Vancouver Island and in the river valleys and plateau areas of the south-central mainland. Thus, although agriculture is not of major significance to the province as a whole, it is of considerable importance in these areas. The Okanagan Valley is world famous for its fruit and the interior plateaus, especially the Cariboo region, for beef cattle. The other farming areas produce mixed crops but specialize in small fruits, vegetables and horticultural products. It is in this arable portion that the greater part of British Columbia's population exists. Of its 1,629,082 residents in 1961, 1,113,414 lived in 0.5 p.c. of the total area, in the southwest corner, and 85 p.c. lived across the south, within about a hundred miles of the United States boundary. Vancouver with its environs had a population of 790,165; it is the third largest city in Canada and is a rapidly growing industrial complex. Victoria, the capital of the province, located on the southern tip of Vancouver Island, had a population of 154,152.



Yukon Territory.—North and slightly west of British Columbia lies Yukon Territory, a 207,076-sq. mile triangular area of plateaus and mountain ranges, cut off from the Pacific by the Coast and St. Elias Mountains, bounded on the northeast by the Northwest Territories and on the west by the United States State of Alaska, its only seacoast extending for a hundred miles along the Arctic Ocean west of the Mackenzie River delta. Between the Coast Range on the west and the Mackenzie Mountains Range on the east lies a plateau of rough, irregularly rolling upland having an average elevation of 4,000 feet but with higher areas. Cutting through mountains and plateaus are numerous river valleys. The highest points are in the southwestern corner where many peaks of the St. Elias Mountains reach heights of over 10,000 feet. Mount Logan, the highest in Canada, has an elevation of 19,850 feet.

The whole region is north of latitude 60° and part is beyond the Arctic Circle. In winter, even in the south, the days are short with no effective sunshine but in summer long hours of daylight promote rapid growth where suitable soil is available. Although the area is subject to wide variations in temperature, winters are remarkably mild and periods of intense cold are of short duration.

The major production of this area comes from its mines in the west-central region—gold in the Dawson area and silver, lead, zinc and cadmium in the Mayo district. Nickel and copper are known to exist at Kluane Lake and in the Pelly Mountains, and large iron ore deposits recently discovered in the Snake River area not far from the potentially oil-and-gas-rich Peel Plateau make the Yukon a potentially rich territory. The construction of the Alaska Highway across the southern part of the Territory and its later northward extension now provides a transport route through the central region linked with British Columbia and Alberta distribution centres.

The Yukon is fairly well forested in the valleys of the mountainous areas but cutting is for local use only. There are extensive water power resources on the Yukon River and several small installations are of particular importance in the development of the mining areas.

The population of the Yukon numbered 14,628 in 1961, 5,031 of them living in Whitehorse, the main urban centre, 881 in Dawson and 342 in Mayo.

Northwest Territories.—The Northwest Territories comprise all Canadian territory north of the 60th parallel of latitude with the exception of Yukon Territory and the northwestern tip of Quebec, an area of 1,304,903 sq. miles. Politically, the Territories are divided into three Districts—the Mackenzie District, which includes all the mainland from the Mackenzie River valley on the west to a north-south line following the boundary line between Saskatchewan and Manitoba; the Keewatin District, including the remainder of the mainland and the islands at the mouth of Hudson Bay; and the District of Franklin, including all the Arctic Islands north of the mainland. This vast area, which is more than one third of the total area of Canada, is one of contrast and extremes in topographical characteristics, flora and fauna, and climate. East of the mountain fringe along the Yukon Territory boundary, the mainland portion consists of plains, high in the west and sloping gently to Hudson Bay on the east and to the Arctic Archipelago on the northeast. In the Archipelago, a high mountain range lies in a general north-south direction across Baffin, Devon and Ellesmere Islands with peaks rising above 9,000 feet.

The Interior Plains of the central Continent extend northeastward through the Northwest Territories to the Arctic Ocean and beyond throughout the western islands of the Archipelago with scattered remnants eastward. Across the whole of the low-lying mainland area flows the great Mackenzie River, draining Great Slave Lake and emptying into the Arctic Ocean, a distance of 2,635 miles. The northern limit of tree growth follows a line running from the mouth of the Mackenzie River diagonally southeast to Hudson Bay in northern Manitoba so that the whole northeastern portion of the mainland is treeless tundra studded with countless lakes, swamps and muskeg and having no major drainage system.



Only the southern part of the Mackenzie District lies outside the permafrost area and in this region the summers have about three months with temperatures over 50°F. ; throughout the Mackenzie basin the frost-free period varies from 50 to 100 days. Soil and climatic conditions in some areas are suitable to agricultural pursuits but very light precipitation places a check on such operations. Recently, a Federal Government soil survey being conducted to establish the agricultural possibilities of the northern areas has located a large amount of arable land along a 200-mile stretch of the Liard River which has added almost a million acres to the total arable land of Canada. This land is best suited for livestock farming with some feed production, although garden crops may also be grown.

On the mainland north of the treeline, freezing temperatures may occur during any month of the year and the winters are long and bitterly cold. On the other hand, the climates of the Archipelago are moderated by the sea so that the extremes are not as severe as they would be in a continental area of the same latitude. Temperatures are generally below zero for six months or more but occasional mild periods occur during the winter, particularly in the western Arctic. Summers are short and cool throughout. The Arctic Archipelago is one of the driest regions in the world and snowfall is light. Much of the ground is swept bare all winter but deep drifts are formed in ravines and in the lee of obstacles.

Although this large area is considered to have great mineral potential, the only production at present includes uranium, radium and gold from the east coast of Great Bear Lake, gold from the Yellowknife area north of Great Slave Lake and a small amount of

oil from the Norman Wells area on the Mackenzie River. In the western Arctic islands active exploration for oil and gas is taking place and recently a large deposit of exceptionally high-grade iron ore has been located on northern Baffin Island.

The fur and fisheries resources of the area are the mainstay of the native populations and are exploited commercially to some extent. Great Slave Lake yields a fair amount of whitefish and lake trout which is sent south in fresh form and about 5 p.c. of the fur pelts taken in Canada come from the Northwest Territories.

In 1961 only 22,998 people lived in this vast area, over 14,000 of them in the Mackenzie River district. Yellowknife on the north shore of Great Slave Lake and Hay River on the south shore had populations of 3,245 and 1,338, respectively. These are the only centres linked by road with Alberta points to the south. In the Eastern Arctic, the best known centre and focal point for operations in the area is Frobisher Bay. Of the total population, 7,977 were Eskimos, most of them scattered along the mainland coast and the west coast of Baffin Island.

Subsection 2.—Inland Waters

The inland waters of Canada (not including saltwater areas that are a part of Canada) are extensive, constituting about 7.6 p.c. of the total area of the country. Aside from their basic essentiality to the support of life, Canada's fast-flowing rivers and chains of lakes have had a great bearing on the development of the country and on its economic and social well-being. In the early days of exploration and settlement, they were the avenues of transportation and often the source of subsistence. These functions have now diminished in importance; with the exception of the St. Lawrence and certain water routes in the interior and the Far North, the rivers and lakes have assumed other roles in the domestic, industrial, agricultural and recreational life of the people. They still serve as efficient carriers of pulpwood from the forests to the mills and their waters are harnessed to provide power for industry or are dammed and diverted to irrigate and bring life to otherwise waste land.

The inland waters of Canada are best studied by segregating the main drainage basins. The Atlantic drainage basin is the most important, being dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 678,000 sq. miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From Duluth, Minn., at the head of Lake Superior to Belle Isle at the entrance to the Gulf of St. Lawrence the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield—a rugged, rocky, plateau region from which tributary rivers tumble over the edge of the Shield. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The St. John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin, though the largest in area, is the least important economically. Only the Nelson and Churchill Rivers have power potential within economical distance of settled areas. The two main branches of the Saskatchewan River, tributary to the Nelson, drain one of Canada's great agricultural regions and are now the bases of important irrigation projects.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers, which flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area in the three westernmost provinces of approximately 700,000 sq. miles. Except for a 16-mile portage in Alberta, it is possible for steamboats to navigate from the end of steel at Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro developments and in season swarm with salmon returning inland to their spawning grounds. The major rivers of the basin are the Fraser which rises in the Rocky Mountains and toward its mouth flows through a rich agricultural area, the Columbia which is an international river with a total fall of 2,650 feet during its course and has thus a tremendous power potential, and the Yukon River which is also an international river but, though the largest on the Pacific slope, is at present relatively unimportant economically.

Table 3 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indentation of names; thus the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

3.—Lengths of Principal Rivers and Their Tributaries

Drainage Basin and River	Length	Drainage Basin and River	Length
	miles		miles
Flowing into the Atlantic Ocean		Flowing into Hudson Bay	
St. Lawrence (to head of St. Louis, Minn.).....	1,900	Nelson (to head of Bow).....	1,600
Ottawa.....	686	Saskatchewan (to head of Bow).....	1,205
Gatineau.....	240	South Saskatchewan.....	885
du Lièvre.....	205	Red Deer.....	385
Coulonge.....	135	Bow.....	315
Madawaska.....	130	Belly.....	180
Rouge.....	115	North Saskatchewan.....	760
Mississippi.....	105	Red (to head of Sheyenne).....	545
Petawawa.....	95	Assiniboine.....	590
South Nation.....	90	Souris.....	450
Dumoine.....	80	Qu'Appelle.....	270
North.....	70	Winnipeg (to head of Firesteel).....	475
North Nation.....	60	English.....	330
Saguenay (to head of Peribonca).....	475	Churchill.....	1,000
Peribonca.....	280	Beaver.....	305
Mistassini.....	185	Koksoak (to head of Kaniapiskau).....	680
Ashuapmucuan.....	165	Kaniapiskau.....	575
St. Maurice.....	325	Severn (to head of Black Birch).....	610
Mattawin.....	100	Albany (to head of Cat).....	610
Manicouagan (to head of Racine de Bouleau).....	310	Dubawnt.....	580
Outardes.....	270	Eastmain.....	510
Beraminis.....	240	Fort George (to Nichicum Lake).....	480
Richelieu.....	210	Attawapiskat.....	465
St. Francis.....	165	Kazan.....	455
Chaudière.....	120	Nottaway (to head of Waswanipi).....	400
Via the Great Lakes—		Waswanipi.....	190
French (to head of Sturgeon).....	180	Nelson (to head of Lake Winnipeg).....	400
Sturgeon.....	110	Rupert.....	380
Grand.....	165	Red (to head of Lake Traverse).....	355
Thames.....	163	George (to Hubbard Lake).....	345
Spanish.....	153	Moose (to head of Mattagami).....	340
Trent.....	150	Abitibi.....	340
Mississagi.....	140	Mattagami.....	275
Nipigon (to head of Ombabika).....	130	Missinabi.....	265
Moirs.....	60	Hayes.....	300
Thessalon.....	40	Winisk.....	295
St. John.....	418	Whale.....	270
Romaine.....	270	Harrieanaw.....	250
Natashquan.....	241	Great Whale.....	230
Moisie.....	210	Leaf.....	165
Hamilton.....	208		
Exploits.....	153	Flowing into the Pacific Ocean	
Naskaupi.....	152	Yukon (mouth to head of Nisutlin).....	1,979
Canairiktok.....	139	Yukon (Int. Boundary to head of Nisutlin).....	714
Eagle.....	138	Porcupine.....	580
Miramichi.....	135	Lewes.....	338
Marguerite.....	130	Pelly.....	330
Gander.....	102		

3.—Lengths of Principal Rivers and Their Tributaries—concluded

Drainage Basin and River	Length	Drainage Basin and River	Length
	miles		miles
Flowing into the Pacific Ocean—concluded		Flowing into the Arctic Ocean	
Yukon (mouth to head of Nisutlin)—concluded		Mackenzie (to head of Finlay).....	2,635
Yukon (Int. Boundary to head of Nisutlin)—concluded		Peace (to head of Finlay).....	1,195
Stewart.....	320	Finlay.....	250
Macmillan.....	200	Smoky.....	245
White.....	185	Little Smoky.....	185
Columbia (total).....	1,150	Parsnip.....	145
Columbia (in Canada).....	459	Athabasca.....	765
Kootenay (total).....	407	Pembina.....	210
Kootenay (in Canada).....	276	Liard.....	755
Fraser.....	850	South Nahanni.....	350
Thompson (to head of North Thompson).....	304	Petitot.....	295
North Thompson.....	210	Fort Nelson.....	260
South Thompson (to head of Shuswap).....	206	Hay.....	530
Nechako.....	287	Peel (to head of Ogilvie).....	425
Stuart (to head of Driftwood).....	258	Arctic Red.....	310
Chilcotin.....	146	Slave.....	258
West Road (Blackwater).....	141	Twitya.....	200
Skeena.....	360	Back.....	605
Bulkley (to head of Maxam Creek).....	160	Coppermine.....	525
Stikine.....	335	Anderson.....	430
Alek.....	260	Horton.....	275
Nass.....	236		

The outstanding lakes of Canada are the Great Lakes, although only parts of these are in Canadian territory. The International Boundary between Canada and the United States passes through Lakes Superior, Huron, St. Clair, Erie and Ontario. Details are given in Table 4.

4.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above Sea Level	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior.....	602.23	383	160	1,302	32,483	11,524
Michigan (U.S.A.).....	580.77	321	118	923	22,400	—
Huron.....	580.77	247	101	750	23,860	15,353
St. Clair.....	575.30	26	24	23	432	270
Erie.....	572.40	241	57	210	9,889	4,912
Ontario.....	245.88	193	53	774	7,313	3,849

There are no tides in the Great Lakes although there is considerable variation in water levels caused by strong winds.

Other large lakes of Canada, ranging in area from 9,500 to 12,300 sq. miles, are Lake Winnipeg, Great Slave Lake and Great Bear Lake. Apart from these, notable for size, are innumerable lakes scattered over that major portion of Canada lying within the Canadian Shield. In an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of 5,294 sq. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

5.—Elevations and Areas of Principal Lakes, by Province

NOTE.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water.

Province and Lake	Elevation	Area	Province and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Newfoundland—			Ontario—concluded		
Deer.....	12	24	Mille Lacs, Lac des.....	1,496	103
Gander.....	86	49	Minnitaki.....	1,177	72
Grand.....	270	205	Nipigon.....	852	1,870
Melville.....	sea level	1,133	Nipissing.....	644	350
Michikamau.....	1,650	566	Ontario (total, 7,313) part.....	245	3,849
Red Indian.....	500	70	Rainy (total, 360) part (reservoir).....	HW 1,108 LW 1,103	291
Victoria.....	700	15	Red.....	1,157	71
Nova Scotia—			St. Clair (total, 432) part.....	574	270
Bras d'Or.....	tidal	360	St. Francis, River St. Lawrence (total, 88) part.....	154	25
New Brunswick—			St. Joseph.....	1,218	187
Grand.....	tidal	65	Sandy.....	906	270
Quebec—			Saul (reservoir).....	1,170	539
Abitibi (total, 369) part.....	868	56	Simcoe.....	718	283
Albanel.....	1,289	172	Stout (Berens River).....	1,039	50
Baskatong (reservoir).....	HW 732 LW 677	109	Sturgeon (English River).....	1,842	110
Bienville.....	1,400	392	Superior (total, 32,483) part.....	602	11,524
Burnt (Brûlé).....	1,590	56	Timagami.....	965	91
Cabonga (reservoir).....	HW 1,185 LW 1,169	66	Timiskaming (total, 121) part.....	HW 589 LW 575	55
Champlain (total, 360) part.....	95	18	Trout (English River).....	1,294	156
Chibougamau.....	1,253	88	Trout (Severn River).....	770	264
Clearwater.....	790	535	Woods, Lake of the (total, 1,695) part (reservoir).....	1,060	953
d'Iberville.....	790	260	Manitoba—		
Evans.....	760	180	Athapapuskow.....	956	104
Goéland.....	810	125	Atikameg.....	855	112
Indian House.....	890	125	Beaverhill.....	651	70
Kanispiskau.....	1,850	210	Cedar.....	830	517
Kempt.....	1,372	75	Cormorant.....	840	174
Kipawa.....	884	125	Cross (Nelson River).....	679	290
Lower Seal.....	860	130	Dauphin.....	853	200
Manicouagan.....	645	110	Dog.....	815	64
Manouane.....	1,340	100	Elawney.....	585	319
Maricourt.....	110	110	Goose.....	922	63
Mattagami.....	765	88	Granville.....	850	181
Minto.....	450	485	Island.....	744	550
Mistassini.....	1,220	840	Kamuchawie (total, 57) part.....	1,156	31
Nichikun.....	1,737	150	Kipahigan (total, 60) part.....	965	29
Olga.....	785	50	Kiskittow.....	697	65
Payne.....	430	230	Kiskittogisu.....	710	99
Pipmucan (reservoir).....	HW 1,305 LW 1,275	90	Kisseising.....	920	138
Pletipi.....	1,660	138	Manitoba.....	812	1,817
Quinze, des.....	HW 867 LW 857	55	Molson.....	154	525
St. Francis, River St. Lawrence (total, 88) part.....	154	63	Moose.....	838	8
St. John.....	321	414	Namew (total, 80) part.....	872	760
St. Louis.....	69	57	Northern Indian.....	700	150
St. Pierre (Peter).....	11	142	Nueltin (total, 850) part.....	920	270
Simard.....	859	73	Oxford.....	612	155
Timiskaming (total, 121) part.....	HW 589 LW 575	66	Paint.....	615	54
Two Mountains.....	73	63	Pelican (west of Lake Winnipegosis).....	837	80
Waswanipi.....	830	75	Playgreen.....	712	257
Ontario—			Red Deer (west of Lake Winnipegosis).....	862	100
Abitibi (total, 369) part.....	868	313	Reed.....	911	78
Dog.....	1,380	61	Reinder (total, 2,467) part.....	1,150	371
Eagle.....	1,192	140	St. Martin.....	798	125
Erie (total, 9,889) part.....	572	4,912	Setting.....	737	49
Huron, including Georgian Bay (total, 23,860) part.....	580	15,353	Sipiwek.....	595	201
Kesagami.....	90	90	Sisipuk (total, 103) part.....	919	71
La Croix (total, 55) part.....	1,186	25	Southern Indian.....	835	1,060
Long.....	1,025	75	Stevenson.....	75	7
Manitou, Kenora.....	1,215	60	Swan.....	849	118
			Talbot.....	845	72
			Todatara (total, 241) part.....	829	156
			Walker.....	679	62
			Waterhen.....	829	90
			Wekusko.....	840	64

5.—Elevations and Areas of Principal Lakes, by Province—concluded

Province and Lake	Elevation ft.	Area sq. miles	Province and Lake	Elevation ft.	Area sq. miles
Manitoba—concluded			British Columbia—concluded		
Winnipeg.....	713	9,465	Babine.....	2,332	194
Winnipegosis.....	833	2,103	Chilko.....	3,860	75
Woods, Lake of the (total, 1,695) part (reservoir).....	1,060	69	Eutsuk.....	2,817	96
Saskatchewan—			François.....	2,345	91
Amisk.....	964	168	Harrison.....	35	87
Athabasca (total, 3,120) part.....	699	2,180	Kootenay.....	1,745	168
Bernard.....	1,278	72	Kotcho.....	1,970	31
Black Birch.....	1,517	54	Lower Arrow.....	1,370	59
Candle.....	1,621	56	Okanagan.....	1,123	136
Canoe.....	1,415	78	Ootsa.....	2,666	50
Churchill.....	1,882	213	Quesnel.....	2,380	100
Cold (total, 138) part.....	1,756	46	Shuswap.....	1,135	120
Cree.....	1,670	446	Stuart.....	2,230	139
Cumberland.....	871	98	Tagish (total, 130) part.....	2,152	78
Deschambault.....	1,072	209	Takla.....	2,260	102
Doré.....	1,506	248	Teslin (total, 142) part.....	2,239	58
Île à la Croix.....	1,380	168	Upper Arrow.....	1,401	88
Kamuchawie (total, 57) part.....	1,156	26	Yukon Territory—		
Kipahigan (total, 60) part.....	966	31	Aishihik.....	3,001	107
La Plonge.....	1,476	90	Atlin (total, 299) part.....	2,192	1
La Ronge.....	1,198	552	Kluane.....	2,525	184
Last Mountain.....	1,606	89	Kusawa.....	2,200	56
Methy Lake (Loche, La).....	1,460	76	Labege.....	2,100	87
Montreal.....	1,608	162	Tagish (total, 130) part.....	2,152	52
Nomev (total, 80) part.....	872	72	Teslin (total, 142) part.....	2,239	84
Nemebien.....	1,259	63	Northwest Territories—		
Peter Pond.....	1,382	302	Aberdeen.....	135	475
Primrose (total, 188) part.....	1,964	180	Artillery.....	1,190	153
Quill.....	1,703	236	Aylmer.....	1,230	340
Reindeer (total, 2,467) part.....	1,150	2,096	Baker.....	30	975
Riou.....	919	32	Clinton-Colden.....	1,230	253
Sisipuk (total, 103) part.....	1,573	110	Dubawnt.....	700	1,600
Smoothstone.....	1,260	159	Faber.....	753	163
Snake.....	1,130	156	Franklin.....	..	175
Tasin.....	1,300	796	Garry.....	..	980
Wollaston.....	..	..	Gras, de.....	1,300	345
Alberta—			Great Bear.....	390	12,275
Athabasca (total, 3,120) part.....	699	940	Great Slave.....	512	10,980
Beaverhill.....	2,202	80	Hardisty.....	699	107
Buffalo.....	2,566	56	Hottah.....	640	377
Calling.....	1,949	55	Kaminuriak.....	820	360
Claire.....	695	545	La Martre.....	870	685
Cold (total, 138) part.....	1,756	92	Macdougall.....	..	265
La Biche.....	1,784	94	MacKay.....	1,415	250
Lesser Slave.....	1,892	461	Maguse.....	..	540
Mamawi.....	695	64	Marian.....	513	90
Peerless.....	2,269	75	Nueltn (total, 850) part.....	920	580
Primrose (total, 188) part.....	1,964	8	Nutarawit.....	..	350
Sullivan (variable).....	2,651	62	Pelly.....	365	331
Utikuma.....	2,115	85	Point.....	1,200	295
British Columbia—			Rae.....	748	74
Adams.....	1,334	52	Schultz.....	125	110
Atlin (total, 299) part.....	2,192	298	Thalintoa.....	..	160
			Todatars (total, 241) part.....	..	85
			Yathkyed.....	480	860

Subsection 3.—Coastal Waters*

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated milages:—

Mainland—

Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

Islands—

Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

* The Federal Government's oceanographic research program is outlined in Chapter XI on Mines and Minerals, Section 2, Subsection 1.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor, and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada.

Atlantic.—Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 120 to 50 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, is of varying depths of from 100 to 200 fathoms before the shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

Arctic.—The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf, surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia, where it is about 500 miles wide; north of North America it surrounds the western islands of the Archipelago and extends 50 to 300 miles seaward from the outermost islands.

The topography of the floor of the submerged part of this continental margin is only partly explored but sufficient has been charted to indicate, in common with continental shelves throughout the world, an abrupt break at the oceanward edge to the relatively steep declivity of the continental slope. This slope borders the western side of the Queen Elizabeth Islands and, from it, deep well-developed troughs enter between the groups of islands. Sills across Davis Strait, Barrow Strait and other channels, on which the depth is about 200 fathoms, interrupt the network of deep troughs and separate the Arctic basin from the Atlantic.

That part of the continental shelf bordering the Arctic Ocean in the vicinity of the Queen Elizabeth Islands is currently the subject of extensive study. Since 1959 a party

based at the joint Canadian-United States weather station at Isachsen on Ellef Ringnes Island has been investigating the oceanography, hydrography, submarine geology, gravity, geomagnetic features and crustal seismic properties of the continental shelf area, carrying out physiographic, hydrological, permafrost and glaciological studies on the islands of the region, mapping the nature, distribution and movement of the sea ice, and running basic topographic control surveys. This work is continuing, with a party in the field from March to September each year, and should eventually cover all of the unmapped parts of the shelf between Greenland and Alaska. The region between, and offshore from, Meighen Island and Borden Island has received the first detailed study; the work is being extended to the southwest toward Mould Bay on Prince Patrick Island. The investigations should ultimately yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters, the bathymetry of the continental shelf and slope and the straits and sounds of the Archipelago; the topography and structure of the shelf and the nature of its sediments, its underlying rocks and possible mineral resources; the structure and physical characteristics of the northern edge of the North American continental platform and its contact with the Arctic Ocean basin; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the behaviour of sea level, glaciers, sea ice and climate in the recent geological past.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

Subsection 4.—Islands

The largest islands of Canada are in the north and all experience an Arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north—lying north of the M'Clure Strait-Viscount Melville Sound-Barrow Strait-Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the largest islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

6.—Areas of Principal Islands, by Region

Region and Island	Area sq. miles	Region and Island	Area sq. miles
Arctic Archipelago—		Hudson Bay and Strait—concluded	
Northern Region (Queen Elizabeth Islands)—		Mansel.....	1,285
Ellesmere.....	82,119	Akimiski (James Bay).....	1,137
Devon.....	20,861	Belcher (total for group).....	1,118
Melville.....	16,369	Nottingham.....	543
Axel Heiberg.....	15,779	Resolution.....	387
Bathurst.....	7,609	Salisbury.....	312
Prince Patrick.....	6,081	Big.....	310
Ellef Ringnes.....	5,139	Akpatok (Ungava Bay).....	296
Cornwallis.....	2,670	Charlton (James Bay).....	119
Amund Ringnes.....	2,515	Edgell.....	106
Mackenzie King.....	1,922	Killiney.....	104
Borden.....	1,344	Pacific Coast—	
Cornwall.....	1,292	Vancouver.....	12,408
Eglinton.....	551	Queen Charlotte.....	3,705
King Christian.....	448	Graham.....	2,491
Lougheed.....	413	Moresby.....	991
Brock.....	396	Louise.....	108
Cameron.....	396	Lyell.....	63
Byam Martin.....	376	Kunghit.....	52
Meighen.....	293	Princess Royal.....	870
Graham.....	293	Pitt.....	537
North Kent.....	258	Banks.....	490
Emerald.....	251	King.....	324
Coburg.....	141	Porcher.....	199
Little Cornwallis.....	139	Nootka.....	198
Baillie Hamilton.....	114	Aristazabal.....	167
Southern Region—		Gilford.....	151
Baffin.....	183,810	Hawkesbury.....	143
Victoria.....	81,930	Hunter.....	136
Banks.....	23,230	Calvert.....	118
Prince of Wales.....	12,830	Texada.....	117
Somerset.....	9,370	Swindle.....	109
King William.....	4,955	Quadra.....	103
Bylot.....	4,200	McCauley.....	102
Prince Charles.....	3,639	Gil.....	94
Stefansson.....	2,890	Roderick.....	88
Air Force.....	596	Gribbell.....	86
Wales.....	439	Atlantic Coast—	
Rowley.....	436	Newfoundland—	
Vansittart.....	386	Labrador Coast—	
Russell.....	349	South Aulatsivik.....	167
Jens Munk.....	330	Okak (total for two).....	113
White.....	301	Tunungayualok.....	72
Bray.....	281	North Aulatsivik.....	53
Foley.....	261	Island—	
Koch.....	183	Newfoundland.....	42,734
Matty.....	173	Fogo.....	95
Royal Geographical Society		New World.....	73
(the larger of two).....	173	Gulf of St. Lawrence—	
Jenny Lind.....	170	Cape Breton.....	3,970
Crown Prince Frederic.....	170	Anticosti.....	3,043
Prescott.....	167	Prince Edward.....	2,184
Loks Land.....	164	Magdalen (total for group).....	88
Melbourne.....	149	Shippegan.....	59
Tennent.....	118	Bay of Fundy—	
Gateshead.....	86	Grand Manan.....	55
Hudson Bay and Strait—			
Southampton.....	15,700		
Coats.....	2,206		

Subsection 5.—Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 7 in feet above mean sea level.

7.—Principal Heights in each Province and Territory

NOTE.—Certain peaks, indicated by an asterisk (*), form part of the line of demarcation between political subdivisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Newfoundland		Quebec—concluded	
Long Range—		Shield—	
Lewis Hills.....	2,672	Mount Tremblant.....	3,150
Gros Morne.....	2,644	Mount Ste. Anne.....	2,625
Mount St. Gregory.....	2,251	Mount Sir Wilfrid.....	2,569
Gros Pâté.....	2,152	Monteregian Hills—	
Blue Mountain.....	2,128	St. Hilaire Mountain.....	1,350
Table Mountain.....	1,900-1,950	Yamaska Mountain.....	1,350
Blue Hills of Coteau—		Rougemont.....	1,200
Peter Snout.....	1,600-1,650	Mount Johnson.....	750
Central Highlands—		Mount Royal.....	750
Main Topsail.....	1,822		
Mizzen Topsail.....	1,761		
Torngats—		Ontario	
Cirque Mountain.....	5,160	Tip Top Hill.....	2,120
Mount Cladonia.....	4,725	Mount Batchawana.....	2,100
Mount Eliot.....	4,650	Niagara Escarpment—	
Mount Tetragona.....	4,500	Osler Bluff.....	1,700
Quartzite Mountain.....	3,930	Caledon Mountain.....	1,400
Blow Me Down Mountain.....	3,880	Blue Mountain.....	1,250
Kaumjets—		High Hill.....	1,150
Bishops Mitre.....	4,060	Mount Nemo.....	1,000
Finger Hill.....	3,390		
		Manitoba	
Nova Scotia		Duck Mountain.....	2,727
(Spot height—Cape Breton).....	1,747	Porcupine Mountain.....	2,700
Ingonish Mountain.....	1,392	Riding Mountain.....	2,000
Nutby Mountain (Cobequid).....	1,204		
Dalhousie Mountain (Cobequid).....	1,115	Saskatchewan	
North Mountain (4 miles NE of West Bay Road).....	875	Cypress Hills ¹	4,546
Sporting Mountain.....	675	Wood Mountain (West Summit).....	3,371
		Wood Mountain (East Summit).....	3,347
New Brunswick		Vermilion Hills.....	2,500
Mount Carleton.....	2,690		
Green Mountain.....	1,595	Alberta	
Moose Mountain.....	1,490	Rockies—	
		*Mount Columbia.....	12,294 ²
Quebec		The Twins (N Peak).....	12,085
Appalachians—		Mount Forbes.....	11,902
Mount Jacques Cartier (Shickshocks)....	4,160	Mount Alberta.....	11,874
Mount Richardson.....	3,885	*Mount Assiniboine.....	11,870 ²
Barn Mountain.....	3,775	The Twins (S Peak).....	11,675
Mount Logan.....	3,700	Mount Temple.....	11,636
Mégantic Mountain.....	3,625	Mount Kitchener.....	11,500
Mount Albert.....	3,550	*Mount Lyell.....	11,495 ²
Bayfield Mountain.....	3,470	*Mount Hungabee.....	11,457 ²
Mattawa Mountain.....	3,370	Mount Athabasca.....	11,452
Roundtop (Sutton Mountains).....	3,175	*Mount King Edward.....	11,400 ²
Hereford Mountain.....	2,760	Stutfield.....	11,400
Orford Mountain.....	2,750	Mount Brazeau.....	11,386
Pinnacle Mountain.....	2,150	*Mount Victoria.....	11,365 ²
Brome Mountain.....	1,800	*The Snow Dome.....	11,340 ²
Shefford Mountain.....	1,725	*Mount Joffre.....	11,316 ²

For footnotes, see end of table.

7.—Principal Heights in each Province and Territory—concluded

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Alberta—concluded		British Columbia—concluded	
Rockies—concluded		Rockies—concluded	
*Mount Deltaform.....	11,235 ²	Mount Odaray.....	10,175
*Mount Lefroy.....	11,230 ²	Mount Laussedat.....	10,035
*Mount Alexandra.....	11,214 ²	Mount Burgess.....	8,473
*Mount Sir Douglas.....	11,174 ²		
Woolley.....	11,170		
*Lunette Peak.....	11,150 ²		
Mount Hector.....	11,135		
Diadem Peak.....	11,060		
Mount Edith Cavell.....	11,033		
Mount Chown.....	10,930		
Mount Wilson.....	10,631		
Clearwater Mountain.....	10,420		
Mount Coleman.....	10,262		
Eiffel Peak.....	10,101		
Pinnacle Mount.....	10,072		
Mount Fryatt.....	10,028		
Mount Rundle.....	9,833		
The Three Sisters.....	9,744		
Mount Eisenhower.....	8,750		
Mount Edith.....	8,370		
British Columbia		Yukon Territory	
Vancouver Island Range—		St. Elias Mountains—	
Mount Albert Edward.....	6,968	Mount Logan.....	19,850
Mount Arrowsmith.....	5,960	*Mount St. Elias.....	18,008 ⁴
Coast Range—		Mount Lucania.....	17,150
Mount Waddington.....	13,260	King Peak.....	17,130
St. Elias Range—		Mount Steele.....	16,440
*Mount Fairweather.....	15,300 ¹	Mount Wood.....	15,880
*Mount Root.....	12,860 ¹	*Mount Vancouver.....	15,700 ⁴
Columbia Mountains—		*Mount Hubbard.....	14,950 ⁴
Monashee—		Mount Walsh.....	14,780
Mount Begbie.....	8,956	*Mount Alverstone.....	14,500 ⁴
Storm Hill.....	6,300	McArthur Peak.....	14,400
Selkirk—		Mount Augusta.....	14,070
Mount Dawson.....	11,020	Strickland.....	13,818
Adamant Mountain.....	10,980	Mount Newton.....	13,811
Grand Mountain.....	10,842	Mount Cook.....	13,760
Iconoclast Mountain.....	10,630	Mount Craig.....	13,250
Mount Rogers.....	10,525	Badham.....	12,625
Rockies—		Mount Malaspina.....	12,150
Mount Robson.....	12,972	Mount Jeannette.....	11,700
Clemenceau.....	12,001	Baird.....	11,375
Mount Goodsir.....	11,686	Mount Seattle.....	10,070
Mount Bryce.....	11,507		
Resplendent.....	11,240		
Mount King George.....	11,226		
Consolation.....	11,200		
The Helmet.....	11,160		
Whitehorn Mountain.....	11,101		
Mount Huber.....	11,051		
Geikie.....	11,016		
Bush.....	11,000		
Freshfield.....	10,945		
Mount Mummery.....	10,918		
*Mount Vaux.....	10,881		
*Mount Ball.....	10,865 ²		
Mount Sir Alexander.....	10,740		
Churchill Peak.....	10,500		
Mount Stephen.....	10,495		
Cathedral Mountain.....	10,464		
Mount Gordon.....	10,346		
President.....	10,287		
		Northwest Territories	
		Arctic Islands—	
		Baffin—	
		Penny Highland (Ice Cap).....	8,200–8,500
		Mount Thule.....	5,800 ²
		Cockscomb Mountain.....	5,300 ²
		Barnes Ice Cap.....	3,700 ²
		Knife Edge Mountain.....	2,700 ²
		Ellesmere—	
		United States Range.....	9,600 ²
		Commonwealth Mountain.....	7,500 ²
		Mount Townsend.....	7,200 ²
		Mount Jeffers.....	6,500 ²
		Mount Wood.....	5,900 ²
		Mount Cheops.....	5,200 ²
		Devon—	
		Ice Cap.....	6,190
		Mackenzie King—	
		Lefinwell Crags.....	1,500
		Banks—	
		Durham Heights.....	2,460
		Victoria—	
		Shaler Mountain.....	2,000
		Mount Bumpus.....	1,700
		Mainland—	
		Mount Sir James MacBrien.....	9,062
		Franklin Mountains—	
		Cap Mountain.....	5,175
		Mount Clark.....	4,733
		Pointed Mountain.....	4,550
		Nahanni Butte.....	4,500
		Richardson Mountains—	
		Mount Goodenough.....	3,219

¹ The summit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta.² Part of the Alberta-British Columbia boundary.³ Part of the British Columbia-Alaska boundary.⁴ Part of the Yukon-Alaska boundary.⁵ Approximate.

Section 2.—Geology

North America comprises six main natural regions: the Canadian Shield, a vast area of ancient rocks that is mainly in Canada; the Interior Plains and Lowlands, the largest of which extends throughout the mid-Continent from the Gulf of Mexico to the Arctic Ocean; the Appalachian Region, mainly in the United States but also forming an important part of Eastern Canada; the Cordilleran Region, extending along the entire west coast of the Continent; the Atlantic Coastal Plain along the eastern seaboard of the United States; and the Innuitian Region, a mountainous belt in the Arctic Archipelago. Canada includes parts of four of these regions and all of the Innuitian Region, but none of the Atlantic Coastal Plain.

These natural regions are physiographic as well as geological because the ages, kinds and structures of the underlying rocks determine the natures of the land surfaces and the type and extent of the resources upon which man relies for his livelihood and utilizes for his economic advancement. This aspect is discussed in Subsection 1 of Section 1 dealing with the main physical and economic features of the provinces and territories. Brief sketches of the individual geological regions together with an outline of geological processes are given in the 1961 Year Book at pp. 5-14; this article is summarized in the 1962 edition at pp. 1-5. Further information is supplied by *Geology and Economic Minerals of Canada* (\$2, including Map 1045A) and *Prospecting in Canada*; the latter also contains chapters on the principles of geology and on minerals and rocks. The *Geological Map of Canada* (1045A, 50 cents) and *Canada, Principal Mining Areas* (900A) are also recommended. Map 900A is revised annually; one copy is sent free to residents of Canada and additional copies are 25 cents each. These publications may be ordered from the Director, Geological Survey of Canada,* together with lists of reports and maps on specific topics and areas, for each province. Other publications are available from provincial mines departments.

PART II.—LAND RESOURCES AND PUBLIC LANDS

Section 1.—Land Resources

Information currently available regarding Canada's vast land resources is shown in Table 1, where the land area is classified as occupied agricultural, forested and 'other' land, the latter including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. Soil surveys now under way by the Department of Agriculture will make it possible in the future to estimate the amount of arable land Canada possesses and, as provincial inventories are completed, more information will be available regarding land now non-forested but not productive in an agricultural sense. The Department of Forestry estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1961, less than 8 p.c. is classed as occupied farm land. A great part of the 1,603,821 sq. miles of 'other' land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is practically nil and the forested area is estimated at 275,800 sq. miles.

* A special article covering the history and current activities of the Geological Survey of Canada appears in the 1960 Year Book, pp. 13-19, and is available from the Director in reprint form. A brief outline of the functions of the Survey is given in the Mines and Minerals Chapter of this volume (see Index).

1.—Land Area classified as Occupied Agricultural or Forested, by Province

Note.—Figures for occupied agricultural land were obtained from the 1961 Census; areas of forested land were compiled by the Department of Forestry from estimates supplied by the Forestry Service in each province.

Description	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Occupied Agricultural Land—												
Improved—Crops and summerfallow..	21	615	518	763	8,218	12,868	17,051	64,223	36,038	1,360	1	141,686
Pasture.....	5	253	199	312	3,614	5,149	1,125	2,170	2,610	554	1	16,012
Other.....	6	28	60	72	456	785	508	1,979	865	121	1	3,870
Unimproved—Forest (woodland) ²	31	453	2,130	1,923	7,033	5,090	2,329	3,341	3,341	1,177	2	26,949
Other.....	22	131	578	367	2,864	5,137	7,368	29,848	30,941	3,829	9	81,094
Totals, Occupied Agricultural Land	85	1,500	3,485	3,437	22,185	29,029	28,391	100,650	73,795	7,041	13	269,611
Forested Land—												
Softwood—Merchantable.....	24,430	78	7,270	6,983	119,639	44,768	14,658	10,117	13,589	80,330	35,200	356,392
Softwood—Young growth.....	5,849	365	2,789	2,854	37,980	36,358	20,417	2,735	14,775	87,786	10,000	230,561
Mixedwood—Merchantable.....	403	133	5,468	2,277	23,932	25,002	5,456	9,011	12,430	—	19,800	108,902
Mixedwood—Young growth.....	269	143	1,144	2,039	18,144	34,524	6,581	5,045	10,936	—	3,500	81,441
Hardwood—Merchantable.....	9	13	699	1,564	3,097	6,006	3,203	4,983	3,945	3,945	4,700	37,759
Hardwood—Young growth.....	244	11	45	953	5,953	17,494	4,852	7,203	13,244	7,953	2,500	55,022
Unclassified ³	2,680	37	427	2,464	1,497	1,189	3,011	3,122	49,426	28,397	—	92,250
Totals, Productive Forested Land.....	33,877	812	15,106	23,834	220,272	165,741	58,183	41,008	119,383	208,411	75,700	962,327
Non-productive Forested Land ⁴	53,915	122	1,283	492	157,860	98,006	64,637	76,730	41,056	59,227	200,100	751,428
Totals, Forested Land.....	87,792	934	16,389	24,326	378,132	261,747	122,820	117,738	160,439	267,638	275,800	1,713,755
Net Productive Land⁵.....	33,931	1,849	16,461	25,348	235,424	189,680	84,245	138,228	189,837	214,275	75,711	1,204,989
Other Land⁶.....	55,199	213	2,658	1,995	130,576	58,406	62,893	5,224	17,907	85,777	1,182,973	1,603,821
Totals, Land Area⁷.....	143,045	2,184	20,402	27,835	523,860	344,092	211,775	220,182	248,800	359,279	1,458,784	3,560,238

¹ Less than half a square mile.

² Included in *Forested Land*; duplication eliminated in the item *Net Productive Land*.

³ Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions.

⁴ Includes only occupied agricultural land (less forest woodland) plus productive forested land.

⁵ Comprises all other land such as urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock and also unclassified land.

⁶ *Net Productive Land* plus *Non-productive Forested Land* plus *Other Land*.

⁷ Includes areas of recent burn, cut-over or windfall not yet re-stocked.

Section 2.—Federal and Provincial Public Lands

In Table 2 classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from provincial government sources.

2.—Total Area classified by Tenure (circa 1962)

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	6,792	2,058	16,162	15,466	43,500	46,397
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	157	87	168	618	375 ¹	1,132
3. National Parks.....	153	7	367	79	2	12
4. Indian reserves.....	—	4	40	60	291	2,431
5. Federal forest experiment stations.....	—	—	—	35	7	41
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	148,882	23	4,687	10,691	476,396	337,583
7. Provincial Parks.....	84	3	1	1	67,486	5,460
8. Provincial forest reserves.....	117	2	—	1,404	6,805	19,526
Totals.....	156,185	2,184	21,425	28,354	594,860	412,582
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	46,273	104,773	95,445	19,605	80	396,551
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	1,219	5,035	2,941	934	1,508,264 ²	1,520,930
3. National Parks.....	1,148	1,496	20,717 ⁴	1,671	3,625 ⁵	29,275
4. Indian reserves.....	819	1,886	2,440	1,278	10	9,259
5. Federal forest experiment stations.....	0	—	23	—	—	106
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	196,174	16,764	122,163	292,511	—	1,605,877
7. Provincial Parks.....	1,638	2,255	2,289	9,964	—	89,178
8. Provincial forest reserves.....	3,729	119,491	9,267	40,292	—	200,633
Totals.....	251,000	251,706	255,285	366,255	1,511,979	3,851,809

¹ Includes Gatineau Park (97 sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks. ² Less than one square mile. ³ Includes 952,849 sq. miles set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks. ⁴ Includes that part of Wood Buffalo Park in Alberta (13,675 sq. miles); this park, although established under the National Parks Act, is administered by the Northern Administration Branch, Department of Northern Affairs and National Resources. ⁵ That part of Wood Buffalo Park in N.W.T. ⁶ A forest experiment area of 25 sq. miles is included in National Parks figure.

Federal Public Lands.—Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, Ordnance and Admiralty Lands, National Parks and National Historic Sites, Forest Experiment Stations, Experimental Farms, Indian reserves and, in general, all public lands held by the several departments of the Federal Government for various purposes connected with federal administration (see Table 2). These lands are administered under the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 80 sq. miles of a total area of 1,511,979 sq. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Northern Administration Branch of the Department of Northern Affairs and National Resources.

Provincial Public Lands.—Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 126 sq. miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVI, under "Lands".)

Subsection 1.—National Parks

The National Parks of Canada are areas selected for their natural or historic importance which are to be preserved for all time for the "benefit, education and enjoyment of the people of Canada". Through the wisdom of farsighted legislators more than 75 years ago, Canada has today a system of National Parks that compares favourably with that of any other country. Initially, an area of 10 sq. miles around mineral hot springs on Sulphur Mountain in Alberta was reserved "from sale, or settlement or squatting" for the benefit of the nation. Two years later—in 1887—the Rocky Mountain Park Act established the first National Park (now Banff) and, since then, other areas across the country have been so preserved. These protected areas, which now cover more than 29,000 sq. miles, are administered by the National Parks Branch of the Department of Northern Affairs and National Resources. They are classified as: *National Parks*—natural wilderness areas set apart for preservation because of the national importance of their flora, fauna and geological features; and *National Historic Parks and Sites*—sites selected as of national significance in the colourful history of the nation.

Fine specimens of plains and wood bison, prong-horned antelope and whooping crane survive today because of the protection afforded them within National Parks. Although hunting is prohibited, angling is permitted in all the parks under regulation as to seasons, bag limits and licences. Nature trails have been set out in most parks and the interpretation of the natural features of each park is made available to the visitor through Park

Naturalists. Park Wardens, supervised by Park Superintendents, are responsible for the various districts of each park and maintain constant vigilance for the safety of their areas and of visitors. Various types of accommodation are available ranging from primitive campgrounds to luxury hotels. The camping facilities are provided by the Park Service but private accommodations are operated by lessees of such establishments.

National Historic Parks, declared of importance in the history of Canada upon advice of the Historic Sites and Monuments Board of Canada, include military, fur-trade and Mounted Police forts, houses of historic interest, and examples of outstanding early-Canadian architecture. Some of the buildings and their surroundings have been partially restored and others have been preserved as they were found; many contain museums. In addition, more than 570 sites have been marked by official tablets commemorating historic events in the life of the nation.

3.—Location, Year Established, Area and Characteristics of National Parks and National Historic Parks

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
National Parks				
Terra Nova.....	On Bonavista Bay, Newfoundland, 205 miles north of St. John's.	1957	153.0	Maritime area now under development; rocky headlands, wooded areas with abundant wildlife, off-shore and fresh-water fishing. Serviced campground and cabin accommodation.
Prince Edward Island..	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of the Gulf of St. Lawrence. Recreational area, fine bathing beaches. Accessible by highway. Hotel and cabin accommodation. Serviced campgrounds.
Cape Breton Highlands.	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coastline with mountainous background. Fine seascapes. Recreational opportunities. Hotel and cabin accommodation. Serviced campgrounds.
Fundy.....	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Delightful recreational area. Forested region, wildlife sanctuary, rugged terrain. Cabin accommodation. Serviced campgrounds.
Georgian Bay Islands..	In Georgian Bay, north of Midland, Ont.	1929	5.4	Recreational and camping area. Unique pillars on Flowerpot Island. Accessible by boat from nearby mainland points. Serviced and unserviced campgrounds on Beausoleil Island.
Point Pelee.....	On Lake Erie in southwestern Ontario.	1918	6.0	Wildlife sanctuary. Remarkable beaches, southern flora. Resting place for migratory birds. Accessible by highway. Serviced campground.
St. Lawrence Islands...	In St. Lawrence River between Brockville and Kingston, Ont.	1914	260.0 (acres)	Mainland area and 14 islands among the Thousand Islands. Recreational and camping area. Accessible by highway; by boat from nearby mainland points.
Riding Mountain.....	Southwestern Manitoba, west of Lake Winnipeg.	1929	1,148.0	Wildlife sanctuary on summit of escarpment. Fine lakes. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Prince Albert.....	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and interlaced with streams. Summer recreational area. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.

3.—Location, Year Established, Area and Characteristics of National Parks and National Historic Parks—continued

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
National Parks— concluded				
Banff.....	Western Alberta, on east slope of Rockies.	1885	2,564.0	Magnificent scenic area; noted resorts, Banff and Lake Louise. Mineral hot springs; summer and winter sports. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Elk Island.....	Central Alberta, near Edmonton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular recreational area. Accessible by highway. Cabin accommodation and serviced campground.
Jasper.....	Western Alberta, on east slope of Rockies.	1907	4,200.0	Mountainous area and noted wildlife sanctuary. Majestic peaks, icefields, beautiful lakes and famous resort, Jasper. Mineral hot springs, summer and winter sports. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Waterton Lakes.....	Southern Alberta, adjoining Glacier Park in Montana, U.S.A.	1895	203.0	Canadian section, Waterton-Glacier International Peace Park. Mountainous area with spectacular peaks and beautiful lakes. Accessible by highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Glacier.....	Southeastern British Columbia, on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Climbing, skiing, camping. Visitor accommodation in development stage.
Kootenay.....	Southeastern British Columbia, on west slope of Rockies.	1920	543.0	Includes Vermilion-Sinclair section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Mount Revelstoke.....	Southeastern British Columbia, on west slope of Selkirks.	1914	100.0	Rolling mountain-top plateau. Colourful alpine meadows. Accessible by secondary highway. Summer accommodation in Park. Championship ski runs and ski jump. Unserved campgrounds.
Yoho.....	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Accessible by rail and highway. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Wood Buffalo ¹	Partly in Alberta and partly in Northwest Territories, between Athabasca and Slave Rivers.	1922	17,300.0	Immense region of forests and open plains. Home of largest remaining herds of plains bison and wood bison on the Continent. Other wildlife abundant.
National Historic Parks			acres	
Signal Hill.....	St. John's, Nfld.....	1958	243.4	Location of military installations and site of operations and battles in 1762. Cabot Tower.
Fort Amherst.....	Prince Edward Island, near Rocky Point.	1959	222.0	Remaining earthworks of British fort built after 1758.

¹ Administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.

3.—Location, Year Established, Area and Characteristics of National Parks and National Historic Parks—concluded

Park	Location	Year Established	Area	Characteristics
			acres	
National Historic Parks—concluded				
Fort Anne.....	Nova Scotia, at Annapolis Royal.	1917	31.0	Site of French fort first built about 1635, finally captured and occupied by British in 1710. Museum and well-preserved earthworks.
Fortress of Louisbourg.	Cape Breton Island, N.S., 25 miles from Sydney.	1941	13,000.0	Ruins of walled city erected by the French, 1713-58. Interesting excavations. Museum.
Halifax Citadel.....	Halifax, N.S.....	1956	36.9	Defence post constructed in 1820's and in 1850's. Museums.
Port Royal.....	Port Royal, N.S., 8 miles from Annapolis Royal.	1941	20.5	Restoration of "Habitation"—first fort built in 1605 by Champlain and DeMonts.
Alexander Graham Bell	Baddeck, N.S.....	1955	14.0	Museum contains mechanical and documentary records of research by the inventor.
Grand Pré.....	Grand Pré, N.S.....	1957	14.0	Commemorates the story of the Acadians and the New England Planters. Museum.
Fort Beauséjour.....	New Brunswick, near Sackville.	1926	81.3	Site of French fort erected in mid-1700's. Museum.
Fort Chambly.....	Chambly, Que.....	1941	2.5	Original French fort built on Richelieu River in 1665 was burned. Present fort built by English in 1709-11. Museum.
Fort Lennox.....	Île aux Noix, Que., near St. Paul.	1941	210.0	Original fort, Île aux Noix, built by French in 1759. Fort Lennox built by English in 1820's.
Sir Wilfrid Laurier's Birthplace.	St. Lin, Que.....	1941	1.0	Original house containing furniture of the period.
Fort Malden.....	Amherstburg, Ont.....	1941	8.0	Site of defence post built 1797-99. Museums.
Fort Wellington.....	Prescott, Ont.....	1941	8.5	Defence post built 1812-13. Museum.
Woodside.....	Kitchener, Ont.....	1954	12.0	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Fort Prince of Wales...	Northern Manitoba, near Churchill.	1941	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
Lower Fort Garry.....	Manitoba, 20 miles north of Winnipeg.	1951	13.0	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
Batoche Rectory.....	Saskatchewan, near Duck Lake.	1954	1.3	Scene of Northwest Rebellion, 1885. Ancient rectory and adjoining Middleton's trenches. Museum.
Fort Battleford.....	Saskatchewan, 4 miles south of North Battleford.	1951	36.7	North West Mounted Police post built in 1876. Museum.
Fort Langley.....	Fort Langley, B.C.....	1953	9.0	Partially restored fort. First permanent British settlement in British Columbia. Museum.
Fort Rodd Hill.....	Esquimalt, B.C.....	1962	44.4	Extensive 19th century stone and concrete coastal fortifications.

Evidence of the increasing attraction of Canada's National Parks and National Historic Parks is the growing numbers of visitors as shown in Table 4.

4.—Visitors to National Parks and National Historic Parks, Years Ended Mar. 31, 1960-63

Park	1960	1961	1962	1963
	No.	No.	No.	No.
National Parks				
Terra Nova.....	..	20,000 ¹	29,710	29,915
Prince Edward Island.....	224,781	412,463	775,583	1,009,021
Cape Breton Highlands.....	193,684	323,392	371,686	451,911
Fundy.....	199,777	227,262	280,006	302,340
Georgian Bay Islands.....	17,630	19,657	14,230	19,126
Point Pelee.....	745,528	545,545	485,637	667,554
St. Lawrence Islands.....	53,745	61,522	86,150	75,239
Riding Mountain.....	659,995	629,140	642,931	654,251
Prince Albert.....	126,818	137,801	140,650	137,484
Banff.....	980,069	1,078,008	1,069,623	1,374,576
Elk Island.....	196,862	198,277	183,263	170,040
Jasper.....	324,857	356,538	346,493	392,987
Waterton Lakes.....	340,220	349,496	420,865	444,752
Glacier.....	347	287	10,213	345,961
Kootenay.....	440,031	467,555	470,562	541,485
Mount Revelstoke.....	16,089	38,634	64,901	428,572
Yoho.....	70,001	65,071	99,160	375,189
Wood Buffalo.....	..	..	..	..
Totals, National Parks.....	4,600,434	4,930,648	5,491,663	7,426,403
National Historic Parks				
Signal Hill.....	7,130 ²	112,054	137,600	239,554
Fort Amherst.....	..	893	1,452	1,764
Fort Anne.....	31,159	57,140	69,646	83,103
Fortress of Louisbourg.....	21,625	23,915	30,036	32,347
Halifax Citadel.....	190,383	204,677	229,677	243,609
Fort Royal.....	28,071	19,842	20,922	31,579
Alexander Graham Bell.....	47,122	59,784	73,682	79,659
Grand Pré.....	38,981	34,361	47,392	47,871
Fort Beauséjour.....	21,369	31,719	43,543	51,454
Fort Chambly.....	67,438	68,738	62,533	71,053
Fort Lennox.....	9,865	30,725	32,890	24,959
Sir Wilfrid Laurier's Birthplace.....	5,993	7,634	7,668	8,186
Fort Malden.....	32,132	41,558	37,334	42,254
Fort Wellington.....	28,732	35,449	38,685	46,666
Woodside.....	4,972	5,170	7,797	10,738
Fort Prince of Wales.....	647	1,251	414	362
Lower Fort Garry.....	33,229	42,787	50,234	59,544
Batoche Rectory.....	936	5,896	15,641	15,350
Fort Battleford.....	15,499	28,992	27,511	30,895
Fort Langleys.....	45,870	91,627	104,961	98,560
Fort Rodd Hill.....	..	..	..	42,533
Totals, National Historic Parks.....	631,153	904,212	1,039,618	1,262,040
Grand Totals.....	5,231,587	5,834,860	6,531,281	8,688,443

¹ Estimated. ² Registrations only.

Subsection 2.—Provincial Parks

Most of the provincial governments of Canada have established parks within their boundaries. Some of these, particularly in Quebec and Ontario, are wilderness areas set aside in order that some portions of the country might be retained in their natural state without change brought about by the hand of man. Most of them, however, are smaller areas of exceptional scenic or other interest which are easily accessible and are equipped

or slated for future development as recreational parks with camping and picnic facilities. The more important parks in each province are mentioned briefly in the following paragraphs.

Newfoundland.—There are 84 sq. miles of provincial parkland in Newfoundland. Fifteen rest parks and camping parks and three regional parks are located along the Trans-Canada Highway, the rest and camping parks containing about 100 acres each and the regional parks averaging about 8 sq. miles in size. Subject to topographical and other conditions favourable to each location, rest parks are spaced 50 miles apart and camping parks are separated by distances of 100 miles. Two larger areas, 42 sq. miles on the west coast known as Serpentine Park and 16 sq. miles in central Newfoundland known as Pitts Pond Park, are undeveloped.

Prince Edward Island.—Eighteen areas totalling 250 acres have been developed as provincial parks: Strathgartney Park, a 40-acre tract of land at Churchill on the Trans-Canada Highway between Charlottetown and Borden, is an excellent picnic site and camping ground with its hardwood groves, fresh spring water and beautiful view over West River and the surrounding country; Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park, comprising 80 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River; Jacques Cartier Park, an area of 13 acres under development at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island; Green Park, 27 acres of land under development on the Trout River, is an attractive combination of land, trees and water and is also of historic interest as one of the oldest shipbuilding centres in the province. Several small parks have been developed or are under development. The parks are maintained by the Department of Industry and Natural Resources.

Nova Scotia.—The Department of Lands and Forests of Nova Scotia operates 13 small parks scattered throughout the province, some of which are equipped for camping and picnicking and others for picnicking only. The Department also operates the Provincial Wildlife Park at Shubenacadie, a 30-acre tract of land maintained in its natural state, as far as is consistent with the need for providing food and protection for the animals and birds that are its main attraction.

A master plan has been prepared of theoretically desirable park locations in the province, taking into consideration the need for roadside facilities, regional picnic parks and camping grounds. Geographic location, population density, volume of traffic and aesthetic features are being evaluated for each site. Roadside table sites, formerly administered by the Department of Highways, are being incorporated into this provincial scheme and will be operated according to provincial park standards. Many of the existing sites will be retained and improved, some will be retained on a temporary basis only and unsuitable sites will be discontinued. The provincial parks program will require about five years of development work for completion.

New Brunswick.—The Department of Lands and Mines operates picnic, campground and beach site parks throughout the province, ranging in size from one to 135 acres. There are 54 of these small parks, most of them adjacent to or accessible from main trunk roads. All sites contain such basic facilities as tables, some form of toilet facility and a potable water supply but in the larger camping grounds and trailer parks the facilities are much more elaborate.

Because of the increasing demands for recreational facilities, the Department is carrying out a program of improvement and expansion of established sites and adding new parks in previously undeveloped areas. There is no entrance fee charged for the use of the smaller parks but at ten of the larger sites a daily camping fee of 50 cents or \$1 is required.

The Department maintains a Game Farm at Magnetic Hill near Moncton where various species of wildlife to be found in the province are displayed.

Quebec.—The Province of Quebec has established six provincial parks and 16 fish and game reserves. Four of the park areas are quite extensive. La Vérendrye Park, 140 miles northwest of Montreal, has an area of 4,953 sq. miles; Laurentide Park, 30 miles north of Quebec City, is 3,613 sq. miles in extent; Mont Tremblant Park, 80 miles north of Montreal, 1,223 sq. miles; and Gaspesian Park, in the Gaspé Peninsula, 514 sq. miles. Mont Orford Park, situated 15 miles west of Sherbrooke, has an area of 16 sq. miles. Deux Montagnes Park, near Okla, 1.5 sq. miles.

Fish and Game Reserves together occupy 41,166 sq. miles.* The Chibougamau Reserve, the Mistassini Reserve and the Assinica Reserve, all northwest of Lake St. John, have areas of 3,400, 5,200 and 3,850 sq. miles, respectively, and farther north is the James Bay Reserve with an area of 25,000 sq. miles. The Aiguebelle Reserve in Abitibi County has an area of 100 sq. miles, the Baie Comeau and Chicoutimi Reserves in the Lake St. John area, 480 and 678 sq. miles, respectively, and the Kipawa Reserve in Témiscamingue County, 1,000 sq. miles. Adjoining Gaspesian Park in the Gaspé Peninsula, the Chic-Chocs, Matane and Joffre Reserves have, respectively, 325, 450 and 40 sq. miles. Also in Gaspé Peninsula are the Port Daniel, Rivière St. Jean and Rivière Petite Cascapédia Reserves for salmon and trout fishing, occupying 20, 13 and 300 sq. miles, respectively. Horton Reserve in Rimouski County has an area of 310 sq. miles.

These parks and reserves are wilderness areas of great scenic interest and are for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mont Orford Park and Deux Montagnes Park, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant Park, located close to a famous year-round recreational area, and Deux Montagnes Park are easily reached in summer by highway from Montreal and are very popular for tent or trailer camping and for swimming and picnicking. Mont Orford has an 18-hole golf course and, in winter, is the rendezvous of Canadian and United States skiers and the site of the Canadian Alpine downhill and slalom championship competitions. Hunting is forbidden in the parks and reserves, except Horton, Joffre, Kipawa and James Bay; in the latter only moose are protected.

Ontario.—The provincial parks system in Ontario has been greatly expanded in recent years. There are 81 parks now available for public use and one new park is in process of development. Thirty other areas are reserved for future development. The total area in the Ontario Provincial Parks system is about 5,460 sq. miles.

The four largest provincial parks—Algonquin, Quetico, Lake Superior and Sibley—together have an area of about 5,200 sq. miles. Algonquin, 180 miles north of Toronto and 105 miles west of Ottawa, has several campgrounds which are accessible by car from Highway 60 and its numerous waterways may be traversed and enjoyed by canoe. There are several commercial children's camps in the Park but the present administration policy is to provide development facilities, such as campgrounds, on the Park fringes and to retain the interior in a natural condition. The interiors of Quetico and Lake Superior Parks are also retained as wilderness areas with only fringe development. Quetico Park is accessible by road at the Dawson Trail Campground on French Lake, and also by water via Basswood Lake in the south. Highway 17 north from Sault Ste. Marie provides access to Lake Superior Park, and Sibley Park may be reached by road from Highway 17 east from Port Arthur. There are small charges for entry of automobiles into provincial parks and for overnight camping.

Under the Wilderness Areas Act, which came into effect in 1959, 36 areas have been established. These tracts of land, widely distributed across the province, vary in size,

* Excluded are the 16,000 sq. miles of the Mingan Reserve, no longer operated by the Department of Game and Fisheries as a reserve.

character and significance but all are regarded as important for their historical, scientific, aesthetic or cultural values. The largest is a 225-sq. mile area of treeless tundra in the northeastern tip of the province, jutting out at the base of Hudson Bay where it meets James Bay. All the other areas are small and none exceeds 640 acres. Perhaps the most widely known is the Sleeping Giant, a geological formation resembling a recumbent man, in Thunder Bay at the Lakehead.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests, Parliament Buildings, Toronto, from which detailed information in booklet form is available.

Manitoba.—In Manitoba, four large areas of virgin forest totalling 1,638 sq. miles have been set aside as provincial parks. In addition, numerous recreational areas, camp and picnic grounds, and roadside stopping places have been established. These park areas are administered by the Parks Division of the Forest Service.

Saskatchewan.—Saskatchewan has 14 provincial parks with a total area of 2,255 sq. miles. Cypress Hills, Duck Mountain, Greenwater Lake and Moose Mountain are operated as summer resorts with chalet, lodge, cabin and trailer accommodation as well as camping and picnic facilities. The other parks have trailer sites and camping, picnicking, boating and swimming facilities. Recreational activities include fishing, boating, swimming, golf, tennis, dancing, baseball, hiking, nature study, horseback riding, etc., and the parks are all well fitted with playground and beach equipment for children. In Cypress Hills Park, elk, antelope, deer, sharp-tailed grouse and beaver are plentiful and brook and other trout have been stocked in streams and lakes. Heavy stands of tall, straight lodgepole pine and white spruce provide a unique forest cover in this area. In Duck Mountain, Moose Mountain and Greenwater Lake Parks, moose, elk, deer, bear and beaver are common, as well as several varieties of grouse and many species of water and smaller land birds. Spruce, poplar and white birch provide excellent cover for wildlife. Pickerel, pike and perch are prevalent in most of the lakes. Lake trout are ardently sought by fishermen in the northern lakes. Three wilderness parks—LaRonge, Nipawin and Meadow Lake—offer wilderness-style canoe routes and 'fly-in' commercially operated fishing and hunting camps. Many roadside picnic grounds are located throughout the province and several excellent Trans-Canada Highway campsites are being developed or are in use.

Sites of historic interest are marked throughout the province and include the Touchwood Hills Hudson's Bay Post, where picnic facilities are available.

Alberta.—In Alberta, 42 provincial parks have been established, with a total area of approximately 140 sq. miles and, of these, 38 are under development. Cypress Hills Provincial Park with an area of 77 sq. miles is the largest and is situated in the southeast portion of the province. Other parks under development are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Entrance, Garner Lake, Gooseberry Lake, Hommy, Kinbrook Island, Lac Cardinal, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, O'Brien, Park Lake, Pembina River, Red Lodge, Rochon Sands, Saskatoon Island, Taber, Thunder Lake, The Vermilion, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford and Writing-on-Stone. These parks are generally provided with picnic, camping and playground facilities and are maintained by the Department of Lands and Forests primarily for the recreation and enjoyment of the residents of the province. There is a park within easy reach of almost every town. The most northerly park is Lac Cardinal, about 28 miles southwest of Peace River, and the southernmost park is Writing-on-Stone which adjoins the Alberta-Montana border. Alberta's provincial parks were visited by 1,500,000 tourists and vacationists in 1962.

In addition to the recreational parks, 16 sites have been established to mark and preserve locations of historic interest. They include: Athabasca Landing, Buckingham

House, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, Fort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, Hay Lakes Telegraph Station, Massacre Butte, Ribstones, Standoff, Stephansson and Twelve Foot Davis.

Provided also for Albertans are the Wilderness Provincial Park, which adjoins Jasper National Park in the north and extends along the British Columbia border, and two wilderness areas established under the Forest Reserves Act in 1961. The Wilderness Provincial Park has an area of 2,149 sq. miles, Siffleur Wilderness 159 sq. miles and White Goat Wilderness 489 sq. miles. These areas have been set aside to preserve as far as possible the natural scene and are not subject to any development or provided with roads.

British Columbia.—There are 200 provincial parks in British Columbia with a total area of 9,964 sq. miles. These parks are classified as A, B and C. Class A parks are reserved solely for recreational purposes; some are highly developed and others are wilderness areas. Class B parks are set aside primarily for recreation, but regulations permit other natural resource use where this is not in conflict with recreation. Class C parks are administered in detail by a Parks Board of local citizens, under the over-all jurisdiction of the Minister of the Department of Recreation and Conservation. British Columbia parks are in many stages of development and dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park. Outstanding scenic and mountain reserves include Garibaldi, Mount Robson, Manning and Bowron Lakes Parks. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forested parks that have achieved tremendous popularity with tourists—the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The famous gold town of Barkerville has been restored to become the first Provincial Historic Park. Five marine parks with mooring facilities and campsites have been developed on the islands of the Straits of Georgia for the benefit of water-borne recreationalists. The popularity of the province's parks, with their integrated campsites and picnic areas, is attested by the record number of 3,700,000 visitors during 1962. Of these, 840,000 were campers and the remainder were day visitors. Records show that Mount Seymour, Cultus Lake and Alouette Lake Parks were the most popular.

Subsection 3.—Canada's National Capital*

Ottawa, the city selected by Queen Victoria in 1857 to be the seat of government for the Province of Canada in British North America, was designated the National Capital upon Confederation on July 1, 1867. The community had grown out of the military and construction camp that served as headquarters for the building of the Rideau Canal, a project carried out between 1826 and 1832 to establish a safe navigable waterway between Lake Ontario and the Ottawa River. The building of the Canal was the crowning achievement in the life of a distinguished British military engineer, Lieutenant-Colonel John By, R.E., who gave his name to the new settlement inhabited mainly by stone-masons and discharged soldiers. As time passed, Bytown prospered as a timber centre and was incorporated as a town in 1847. Then, on Dec. 18, 1854, the name of Bytown was changed to Ottawa and under that name the community was incorporated as a city on Jan. 1, 1855.

The city, situated in an area of great natural beauty and surrounded by waterways, has remained a self-governing municipality and, although throughout the years the Federal Government co-operated with the municipal authorities in the development of a system of driveways and parks, the city expanded without the benefit of a comprehensive plan. However, in 1950 a Master Plan was presented to the Government of Canada, designed to guide the development of the Capital's urban area over the following half-century and to protect the beauty of the surrounding National Capital Region. This Region originally covered 900 sq. miles but was increased in 1959 to 1,800 sq. miles—half in the Province of Ontario and half in the Province of Quebec. Although the successful implementation of

* Prepared in the Information and Historical Division, National Capital Commission, Ottawa.

the Plan is dependent upon the co-operation of the cities of Ottawa and Hull—which are treated as a physical, social and economic whole—and of about sixty other autonomous municipalities and the two provincial governments involved, the National Capital Plan is not officially recognized by the Governments of Ontario and Quebec, and the City of Ottawa has as yet no municipal plan to govern its growth and development.

The federal agency responsible for the planning of Canada's Capital is the National Capital Commission, created in 1959 to replace the Federal District Commission which, in turn, was the lineal descendant of the Ottawa Improvement Commission. The National Capital Commission, which reports to Parliament through the Minister of Public Works, is composed of twenty members appointed by the Governor in Council and representing each of Canada's ten provinces. It is headed by a chairman and a general manager and has a personnel of about 650, although this number fluctuates because of the seasonal character of a large part of the work involved. Six committees give advice and direction to the Commission: the *Executive Committee* consists of the chairman and vice-chairman of the Commission and three other members appointed by the Commission, one of whom is from the Province of Quebec; the *Land Committee*, composed of several experts in land evaluation, advises the Commission on matters of land purchases and property administration; the *Advisory Committee on Design*, comprising prominent Canadian architects, town planners and landscape architects, gives advice on the external appearance of government buildings, locations, site plans and landscape designs; the *Historical Advisory Committee* advises the Commission on matters of preservation, marking and interpretation of buildings and sites having historical significance within the National Capital Region; the *Information and Historical Advisory Committee* studies and considers the publicity and public relations activities of the Commission, and carries out an extensive program of historical research and preservation; and the *Gatineau Park Advisory Committee* is concerned with the administration and development of Gatineau Park.

The National Capital Plan, as conceived by the eminent French town planner Jacques Gréber, was dedicated to those who gave their lives for Canada during the Second World War and has since constituted the Commission's planning guide for the Capital of Canada. In accordance with the first proposal of the Master Plan, the principle of "open space" is being applied, a policy beneficial to both residents and visitors. Part of this policy involves the restoration to their natural beauty of the shores of the waterways in and around Ottawa, a program evident in the work of the Commission at Rideau Falls Park opposite the City Hall and in the development of Vincent Massey Park in the heart of the city; the latter is a 75-acre park and playground extension to 50-acre Hog's Back Park at the foot of Hog's Back Falls. The Commission owns 36 miles of riverfront property in the National Capital and makes these attractive areas accessible to the public. On the Quebec side of the Ottawa River the Commission maintains two parks—the historically interesting Brébeuf Park and Jacques Cartier Park, both on the shores of the Ottawa River. There are at present 40 miles of wide landscaped roadways in Ottawa and Hull, and 30 miles of right-of-way have been acquired for future expansion. The Commission cares for the landscaping of 13 municipal parks in Ottawa-Hull, of which Strathcona Park in Sandy Hill district and Rockcliffe Park are the most extensive and attractive. The acquisition of land along both shores of the Ottawa and Rideau Rivers and the exceptionally wide rights-of-way for parkways have given Ottawa about 7,000 acres of open space.

The program of partial decentralization of new government buildings has been under way for some time and excellent examples of planned sites for government structures now exist at Confederation Heights, at Tunney's Pasture and at the Printing Bureau site in Hull. Other areas, such as the large tract of already serviced land at Pinecrest, are awaiting development. The advantages of decentralization are many—planned government building areas away from centre-town offer some solution to the ever-pressing problem of traffic congestion and, from the humanitarian point of view, workers occupy buildings erected on large landscaped grounds with plenty of parking space and are close

to main traffic arteries and shopping centres, and often to good housing developments. The grounds of more than 140 government buildings in the National Capital Region are cared for by the Commission, which also gives assistance to municipal projects that enhance the attractiveness of the area, such as the provision of land and landscaping for the 12-mile Queensway being built under a four-way partnership between the Federal Government, the National Capital Commission, the Province of Ontario and the City of Ottawa.

An important proposal of the Master Plan calls for the establishment of a greenbelt around the National Capital, one of the main objectives of which is to restrain the tentacular growth of the city so that family dwelling projects will be built on lands that can be supplied, at reasonable cost, with water and sewer services. There is also the aesthetic consideration that this belt of green open space and planned building sites will provide the beautified Capital with suitable approaches. The present semicircular greenbelt on the Ontario side occupies 41,000 acres of land and surrounds, to a depth of about two and one half miles, the urban zone at an average distance of nine miles from the Peace Tower. The Commission encourages agricultural activity within this area and at the same time reserves within its boundaries certain tracts of land to be occupied by government buildings, public institutions and some types of industrial development such as research and experimentation establishments requiring considerable space to operate. There are many other factors that help make the Ottawa greenbelt an ideal planning measure: it allows some control over the demographic increase of the Capital; it is an incentive for better urban land use; and it favours the development of satellite communities in the National Capital Region.

The Commission has begun the large-scale program advocated in the Master Plan of removing railway trackage and yards from the urban area with the co-operation of the railway companies. The abandoned rights-of-way are destined to become roadways which will relieve traffic bottlenecks within the heart of the city; the Queensway, now under construction, runs on a former railway bed. This program, which is expected to be completed by 1965, involves the removal of 32 miles of track, the elimination of 72 railway crossings and the consequent acquisition of 449 acres of high-value land for redevelopment.

The Master Plan also includes the establishment and development of the beautiful and impressive Gatineau Park, a 75,000-acre forest and lake area in the shape of a triangle stretching from its apex in the city of Hull northwestward for 35 miles into the Laurentian Hills. The National Capital Commission owns more than 62,000 acres of the projected area and the acquisition of private holdings is continuing. The 22 miles of parkway now traversing this area are to be extended deeper into the wilderness. Camping and picnic sites are being improved by the installation of drinking fountains, barbecues and outdoor ovens, and well-designed restrooms, and by the addition of fishing and swimming facilities. At Lac Philippe and Lac Lap  che, two of the four big lakes in Gatineau Park, the Commission has developed or is planning large-scale public recreation facilities with easy road access.

In addition to these major development projects, the National Capital Commission, through its Historical Advisory Committee, plans to conserve historic buildings and sites as mementoes of the past. Such sites are carefully studied and their preservation and suitable marking is an important part of the over-all program.

Planning aid to municipalities in the National Capital Region is given in the form of grants in special circumstances and advice on establishing areas of subdivision control, preparation of basic plans and maps, master plans for communities and zoning legislation. This advice is available upon request and the Commission, having no planning powers, must seek to persuade rather than impose its proposals.

Estimated expenditures for the Commission projects in the year ended Mar. 31, 1963 total \$27,477,470, which includes \$3,325,970 for administration, operation and maintenance, \$11,151,500 for capital projects and assistance to municipalities, and \$13,000,000 for property acquisition.

Section 3.—Wildlife Resources and Conservation*

Wildlife in Canada is considered to be an important renewable natural resource. In the early days, wildlife was, and in large areas still is, a form of sustenance in the hinterland and trade in fur determined the course of exploration and settlement. During the period of the opening up of the country, many species of animals and birds became seriously depleted or completely extinct. The passenger pigeon, the great auk and the Labrador duck were extirpated, the buffalo vanished from the prairies, and wapiti, prong-horn antelope and musk-oxen were reduced to small fractions of their former numbers. The destruction was not limited to the animals and birds but in the areas of settlement their habitat was endangered by the cutting and burning of the forests, the diversion and pollution of streams and the changing of the face of the land.

Since then, it may be said that wildlife has been changed and influenced by man to the degree that he has changed and influenced the environment. The arctic and alpine tundra, one of Canada's major vegetational regions, has been changed hardly at all; the adjacent sub-arctic and sub-alpine non-commercial forest has been changed principally as a result of increased human travel causing more forest fires; the great commercial forest farther south has not lost its real character through being managed; cultivable lands, whether originally forest or grassland, have completely changed but often they and the managed forest are better for many forms of wildlife than the original wilderness. Some creatures thrive on change. There are more moose, deer, grouse and probably more coyotes than in Indian days. Fur species, such as beaver and muskrat, are easily managed and many small mammals and birds thrive better in fields and woodlots than in the virgin forest, provided that they are not poisoned by pesticides. At the present time, the harvestable surplus of game and fur species across Canada is seldom fully utilized and it is quite clear that wildlife will remain abundant in Canada wherever there is suitable habitat and enlightened management.

Thus, Canada today is known throughout the world for the wealth and variety of its wildlife. It maintains most or all the existing stocks of woodland caribou, California bighorn sheep, wolves, grizzly bears and wolverines, to mention a few. And these animals exist not only because of the vastness of their habitat but also because of man's efforts to preserve them. There is evidence of concern about the preservation of wildlife by the early Canadians; there were game laws in force in the original provinces when all but a few thousand acres of land were still the patrimony of the Indians. In 1887 pioneer conservationists were instrumental in establishing Banff Park in Alberta and in setting up a bird sanctuary at Last Mountain Lake in Saskatchewan, the first on the Continent. The same fervour for preservation of Canada's wildlife heritage led to the complete protection of wood bison in 1893 and to the purchase and establishment of a nucleus herd of plains bison at Wainwright in Alberta in 1907. Thus was formed the basis of wildlife conservation efforts which, for a long time, took the form of complete protection of certain species from destruction by man or predator. Better knowledge of nature's operations and the recognition of the fact that many other factors combine to cause fluctuation in wildlife numbers are now being reflected in a loosening of restrictions on hunting and a rescinding of preserves. The science of animal numbers is new and sometimes runs counter to popular prejudice. But it is well understood that any area will support only so many animals, and species that are highly productive must have a quick turnover. Wildlife must never be separated from the consideration of its environment and if the environment is fully stocked the annual increment need only replace the losses. All extra is surplus, only part of which is taken by predators and part, if the animal is a game species, by man.

As a natural resource, wildlife within the provinces comes under the administration of the respective provincial governments; wildlife on federal lands and certain problems of national or international interest are the concern of the Federal Government.

* A series of special articles relating to the wildlife resources of Canada has been carried in previous editions of the Year Book. See the list of special articles in Chapter XXVI, Part II, under the heading of "Fauna and Flora".

The Canadian Wildlife Service.—The Canadian Wildlife Service deals with most wildlife problems coming within the jurisdiction of the Federal Government. It was organized in 1947 to meet the growing need for scientific research in wildlife management and is a division of the National Parks Branch of the Department of Northern Affairs and National Resources. The Service conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory and the National Parks, advises the administrative agencies concerned on wildlife management, and co-operates in the application of such advice. It administers the Migratory Birds Convention Act, provides co-ordination and advice in connection with the administration of the Game Export Act in the provinces, deals with national and international problems relating to wildlife resources, and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. It provides a measure of protection for numerous species of birds that migrate between the two countries. The Canadian Wildlife Service, in its capacity as administrator of the Act, is responsible for the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons and other waterfowl hunting details, taking and possessing migratory birds for scientific or propagating purposes, eiderdown collecting, etc. The Act and Regulations thereunder are enforced by the Royal Canadian Mounted Police and in both administration and enforcement co-operation is received from provincial authorities. There are 108 migratory bird sanctuaries in Canada, having a total area of 39,688 sq. miles. A sanctuary may be established on the initiative of the Department of Northern Affairs and National Resources or of a provincial or municipal government, or on petition by a private person or organization. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada as well as in the United States.

Many research projects under way were continued during 1962. These included the study, in co-operation with the Government of Manitoba and the Council of the Northwest Territories, of barren-ground caribou and of animals that prey upon caribou—wolves, grizzlies and wolverines. With better understanding of caribou physiology and of the effects of destruction of winter range by fire, factors associated therewith have assumed increasing importance, although human utilization still heads the list of recognized mortality causes. Studies continued of such fur mammals as mink, muskrat and beaver in the Mackenzie District, and of polar bear and white fox in Keewatin and Franklin Districts. Big game mammals in the National Parks were also the object of continued study, special attention being given to mountain sheep and wapiti in the mountain parks of Alberta where large populations of those species facilitate investigations, and to the competition for food between wapiti and the livestock still allowed to graze in Riding Mountain Park in Manitoba. In Wood Buffalo Park, investigations into the problems of disease and low reproductive rates among bison were continued as a long-term project in the hope that some control of each might be achieved. An outbreak of anthrax in bison outside the Park was dealt with and long-term studies initiated to prevent further losses.

Damage to cereal crops by wild ducks and sandhill cranes continued to receive intensive study and much time was devoted to other species greatly reduced in number or in danger of extinction such as the Ross goose, trumpeter swan and whooping crane. Nation-wide investigations of migratory waterfowl included kill surveys in the Provinces of Prince Edward Island, New Brunswick, Quebec and Ontario and a crop-damage survey in Saskatchewan. The mourning dove census and the Arctic bird-banding program were continued.

At the end of 1962 the research staff included 41 wildlife biologists stationed at various centres throughout Canada. Ornithologists were located at Vancouver, B.C., Edmonton, Alta., Saskatoon, Sask., Winnipeg, Man., Ottawa and Aurora, Ont., Quebec, Que., Sackville, N.B., and St. John's, Nfld. Mammalogists were stationed in the Northwest Territories at Fort Smith and Inuvik, at Whitehorse in the Yukon Territory, and at Edmonton

and Ottawa. A limnologist was located at Edmonton and Jasper and a range specialist and two pathologists at Edmonton and Ottawa, respectively. A number of university graduates and undergraduates are engaged annually to assist in summer field work. Ottawa headquarters has an administrative staff of about 30 in addition to supervisory research officers and about 25 part-time migratory bird wardens and sanctuary caretakers are employed.

Provincial Government Wildlife Conservation Measures.—As stated previously, each province has jurisdiction over its own wildlife resources. The measures adopted by the respective provincial governments to conserve these resources are discussed briefly in the following paragraphs.*

Newfoundland.—The geographical separation of the province into a mainland and an island area provides two distinct wildlife regions. The Labrador, or mainland, region differs little in avian, faunal and fish species from any other region of Eastern Canada but the Island has only about one half of the number of mammals found on the neighbouring mainland and also fewer species of birds and fish.

Only 14 mammal species are native to the Island—caribou, black bear, beaver, otter, muskrat, red fox, lynx, ermine, pine marten, meadow mouse, Arctic hare, little brown bat, long-eared bat and wolf (now extinct). The development of these native mammals is of considerable interest to taxonomists; ten species have endemic races on the Island and are regarded as subspecies of the mainland species. Seven mammal species have been introduced to the Island—moose, snowshoe hare, house mouse, Norway rat, mink, cinereous shrew and chipmunk—the last three in recent years. The moose and snowshoe hare are of considerable importance to the economy of the Island as sources of meat. However, the harvest of fur bearers is not large. Trapping of beaver, muskrat and mink is conducted on a small scale but usually as a part-time occupation since the returns are not sufficient to provide a livelihood.

The only upland game bird of importance is the ptarmigan, but the ruffed grouse has been successfully introduced in recent years. Of the waterfowl species, Canada geese, black ducks, green winged teal, eider, scoter and old squaw ducks are most important. Murres, generally regarded as a non-game species, are also taken in large numbers and are of considerable importance as a meat source.

Newfoundland, like other provinces, seeks to make wise use of its wildlife resources and, during the past 12 years, has carried out an extensive research program involving moose, caribou, snowshoe hare, beaver, muskrat, lynx and ptarmigan. Certain phases of the caribou research, including inventory, have been conducted on a co-operative basis with the Canadian Wildlife Service and the Tourism, Game and Fish Department of the Province of Quebec.

The utilization of wildlife as a food source is probably greater in Newfoundland than elsewhere in Canada, but dependence on the source has decreased considerably. Appreciation of the aesthetic values of wildlife is increasing rapidly, and preservation of these values for all time is provided by recent proposals to set up wilderness areas and bird sanctuaries where vital habitat conditions are necessary to the continued propagation of a species.

Nova Scotia.—Hunting in Nova Scotia has gone through several stages since the days when it was a necessity of life to the time when ease of access and mechanization began seriously to affect wildlife numbers. The first provincial game laws which were passed in 1794 made it unlawful to kill partridge and blue-winged ducks in certain periods of the year and from these beginnings has developed the existing framework of legislation for game preservation which is administered by the Department of Lands and Forests and is enforced by officers of that Department and the Royal Canadian Mounted Police.

* Additional information on provincial conservation of fisheries resources is given in the Fisheries Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to international fisheries conservation (see Index).

The Wildlife Conservation Division of the Department was established in 1958 to manage wildlife in such a way as to give hunters the ultimate in sport and at the same time keep wildlife populations in line with agricultural and forestry requirements. Also concerned with provincial wildlife is a four-member Cabinet Conservation Committee, which meets periodically to review, study and make plans regarding wildlife resources. The Wildlife Conservation Division conducts a biology section, patrols game and bird sanctuaries, aids in law enforcement, carries on a research program in all phases of wildlife and inland fisheries, and makes recommendations for seasons and bag limits of provincial wildlife. The wisdom of sound conservation laws and practices is accepted by most people without question and the opportunities that Nova Scotia offers the hunter and fisherman, year after year, are the result of sound management practices.

Of prime concern to Division biologists is the deer population. The white-tailed or Virginia deer was introduced to the province about the turn of the century and increased very rapidly. By 1954, the annual harvest had reached 47,000 but in subsequent years a gradual decline has resulted in bag limit cuts. It is the aim of the Division to provide a consistent harvest of well-conditioned deer through flexible regulating measures and the maintenance and improvement of winter deer range. The Division is also engaged in studying the beaver with a view to developing a formula that will enable the province to set seasons and bag limits on this lucrative fur bearing animal. Another problem that is receiving attention is the mystery of Nova Scotia's moose population. Despite the fact that the season has been closed since 1937, moose numbers have not materially increased.

The Wildlife Division is also endeavouring to retain Nova Scotia's migratory waterfowl populations and has recently encouraged law enforcement with beneficial results. There are now nine bird sanctuaries where wildfowl may rest and feed. The black duck is the most important and sought-after of the waterfowl species breeding in the province. Studies are being conducted on other game birds such as the ruffed grouse and the ring-necked pheasant. Pheasant shooting preserves are in operation in the province; in the 1959-60 season more than 15,000 pheasant chicks were hatched and released in the fields and valleys in co-operation with game associations.

The Division provides courses of instruction for junior guides in order to increase the number of competent professional guides which are required by law for non-resident hunters. After three years of training, these juniors are recommended for professional guide licences.

Nova Scotia's more than 20,000 sq. miles of forests and clearings hold over 6,000 lakes, rivers and streams. Fish to be found there include salmon, speckled, gray and brown and rainbow trout, small-mouthed black bass, white and yellow perch, landlocked salmon, pickerel and striped bass. Hundreds of thousands of trout and salmon have been put into the waters from rearing ponds and considerable work has been done on improving the rivers for the movement of migrating salmon. In addition, surveys are being conducted to determine fish population and the feeding habits of certain species.

New Brunswick.—In the Province of New Brunswick, the conservation and management of wildlife species is the responsibility of the Fish and Wildlife Branch, Department of Lands and Mines. In 1893 the provincial authorities apparently realized the importance of the wildlife resources and the necessity of sound management when they established a Game Branch or Game Division within the Department of Lands and Mines under the supervision of a Game Commissioner.

The present Fish and Wildlife Branch, headed by a Director, is divided into four sections dealing with administration, enforcement, game management and fish management. The Branch administers the New Brunswick Game Act, advises the respective provincial officials of necessary additions and revisions in the game regulations, and gives advice and co-ordination to the field staff of the Department of Lands and Mines in connection with the enforcement of the Game Act in the province. It carries out investigations of the wildlife

species that are essential in game management, deals with the numerous problems related to the utilization of the wildlife resources, and co-operates with the various private groups of sportsmen, informing them of the results of current investigations.

The Game Act was passed in 1877 in an attempt to provide a certain amount of protection for a limited number of birds and animals. Under the provisions of this Act, a closed season was established for such important game species as moose, deer and caribou. In addition, it provided for a limited season for the following fur bearing animals: mink, otter, fisher, sable and beaver. Partridge and snipe were also protected by this early legislation with a closed season. Hunters could no longer use a punt gun, swivel gun or net for killing ducks, geese, brant or other wild fowl.

Prior to the original Game Act, legislation pertaining to birds and mammals was limited to granting of bounty for wolves in 1792 and bears in 1828. The payment of bounty was established as a means of compensation to settlers for loss of domestic stock and should not be interpreted as an attempt to control predator populations.

The present New Brunswick Game Act provides adequate protection for the numerous species of game birds, game animals and fur bearing animals in the province. Its numerous provisions include such matters as open and closed seasons, length of season, bag limits, etc. The Act is enforced by the staff of the Forest Service, Department of Lands and Mines, with the co-operation of the Royal Canadian Mounted Police.

In 1919, the provincial government passed legislation authorizing the establishment of game refuges as a conservation measure. The first refuge, consisting of 175 sq. miles of forested Crown land, was established in 1921. At present, twelve game refuges are located throughout the province and contain approximately 1,125 sq. miles.

Research in the field of game management is relatively new in New Brunswick. In the past three years, with the addition of two game biologists and a fish biologist, a number of projects have been initiated. These studies include a population analysis and census of the white-tailed deer; a population analysis and census of the moose herd; an appraisal of DDT spraying on ruffed grouse reproduction; a population analysis of ruffed grouse; an analysis of bob-cat stomachs; and an inventory of the freshwater fishery. Censuses of the woodcock and waterfowl population are carried out in co-operation with the federal Canadian Wildlife Service biologists located at Sackville. In addition, a number of wildlife projects are undertaken by the staff of the Northeastern Wildlife Station, Department of Biology, University of New Brunswick. The staff of the Fish and Wildlife Branch is located at Fredericton.

Quebec.—The provincial Department of Tourism, Game and Fish recently instituted a Wildlife Management Service which employs about 30 biologists and maintains five fish hatcheries for the purpose of restocking public waters. The functions of the biologists include the preparation of inventories of the land and water wildlife resources in their particular areas and the recommendation of conservation measures for possible inclusion in provincial game and fish legislation. Their work also includes the management of public hunting and fishing waters. A study of the biological aspects of the fur trade is at present under way.

To permit the study on a regional basis of problems in connection with sport fisheries, freshwater commercial fisheries and salmon rivers, the province is divided into 11 districts, each headed by a chief biologist. However, because of the vast area involved and the limited number of biologists, there has been no division of the province into districts for the study, conservation or management of big game. In connection with the latter, it may be noted that an experiment has been tried recently; for the first time in 30 years, the Department has permitted a controlled moose hunt in Laurentide Park after drawing by lot the names of a specific number of hunters.

For the management of wildlife, the province is divided into 13 protection districts, staffed with fish and game wardens who are either experienced or recent graduates of the Quebec Game Wardens School. This school provides a course of study, both technical and practical, on the special problems of wildlife conservation.

The province has set aside a number of large areas as fish and game reserves, together totalling 41,166 sq. miles. The names, locations and areas of these reserves are given on p. 39.

Ontario.—The wildlife resources of Ontario are administered by the Fish and Wildlife Branch of the Ontario Department of Lands and Forests. The Branch operates under the authority of the Game and Fish Act, the Wolf and Bear Bounty Act, the Migratory Birds Convention Act (Canada), and the Game Export Act (Canada) and regulations made under each of these. The wildlife resources of the province, both fur and game species, are of considerable economic importance in that they provide income to trappers and to guides and other persons connected with the tourist industry and also provide recreation to residents and visitors. The annual harvest of game and fur in the province is substantial and is believed to be increasing steadily.

The Fish and Wildlife Branch has established a system for the trapping of fur bearing animals, designed to provide equitable and maximum harvests. There are 3,388 registered trapline areas on Crown lands and approximately 4,000 resident trappers operating on private lands. The harvests of these trappers include mainly muskrat and beaver. Most trappers are organized into Trappers' Councils or local Trappers' Associations; these are represented by the Ontario Trappers' Association which performs important services to the industry, particularly in marketing.

The hunting of game in Ontario has become an important recreation and game hunting regulations are in force, designed to permit the maximum recreational opportunity for harvesting the annual surpluses consistent with sound game management practices. In 1960, more than 21,000 non-residents purchased licences to hunt game in the province and some 500,000 resident licences were issued, producing altogether a provincial revenue of \$1,766,000.

Each year approximately 120,000 persons hunt deer in the province and, of those, 6,000 are non-residents. Deer numbers fluctuate in relation to weather conditions, especially in areas of marginal range, and the Department is engaged in a program of research and management of deer range in order to maintain habitat for these animals during the winter months. The hunting of moose is becoming increasingly popular. It is estimated that about 40,000 persons each year are interested in this sport, about 6,000 of them non-residents. Moose have long been abundant in northern Ontario and have recently become prevalent in the southern part of the province where a season has been established. In 1961, the black bear was declared a game animal and a season established. As for small game, each year about 400,000 hunters, particularly in southern Ontario, engage in a considerable amount of hunting for cottontail, jackrabbit, varying hare, squirrel, raccoon and fox.

Game birds are also fairly prevalent in Ontario. Pheasant hunting is confined to the southwestern areas and, although most of the hunting is provided by natural production, two provincial game farms propagate and distribute about 75,000 pheasant chicks, poults or adults annually. In some parts of the province, Hungarian partridge is abundant enough to provide excellent hunting during the early autumn and the ruffed grouse has a wide distribution; it is the main game bird species of northern Ontario and is hunted frequently in woodlots of southern Ontario. Other species, such as the ptarmigan, sharp-tailed grouse, spruce grouse and bobwhite quail, have limited distribution. Ducks and geese, woodcock and snipe are also important game species. It is estimated that 150,000 of the 400,000 small game hunters are also waterfowl hunters. The Department of Lands and Forests has a considerable interest in the development of areas for waterfowl production and harvest.

A system whereby the number of hunters shooting pheasant, rabbit and fox may be controlled is operative in the southern townships within the pheasant range. The townships may charge fees for hunting which provide revenue for conservation work. Much of the money collected is used in pheasant propagation programs. A number of tracts of

private land in southern Ontario have been acquired for public hunting; six of these are intensively managed for pheasants or waterfowl and hunters using them are charged daily or annual fees.

Much of the research on wildlife is carried on by the Research Branch of the Department of Lands and Forests. Studies are conducted at the Wildlife Research Station in Algonquin Park and there has been an increase in the volume and variety of work being done throughout the province under the supervision of wildlife research biologists at the Southern Research Station at Maple. During 1962, the Wildlife Section carried out 75 research projects, some of them in co-operation with the field staffs of Forest Districts or of other agencies.

Saskatchewan.—Saskatchewan officially lists 308 species of birds and 77 species of mammals within its boundaries. Wildlife management deals mainly with four principal groups—economic fur bearers, upland and big game species, migratory waterfowl, and non-game species (including predators).

A program of conservation in relation to the fur bearers has been carried out since the end of World War II in co-operation with the Indian Affairs Branch of the federal Department of Citizenship and Immigration. This program has involved establishment of a Conservation Area program in the Northern Affairs District wherein steps have been taken to assure maximum optimum levels of the most important fur species, notably beaver and muskrat, to provide the highest possible income for northern citizens engaged in trapping. Early in the postwar period, a beaver trapping and transplanting program re-established beaver populations throughout most of northern Saskatchewan. The fur management program permits trapper participation through trapper councils, fur co-operatives, etc. Several projects involving the construction of dykes and dams to help increase and maintain desirable fur populations have been carried out.

Conservation of big game is effected through harvest control by means of regulations and sometimes by the imposition of closed or restricted seasons. For example, comprehensive aerial surveys of antelope, moose and, to a lesser extent, elk and deer are conducted annually to provide trend information that permits management recommendations to be made with relation to big game populations. Inventories of upland game birds and waterfowl permit similar predictions on which recommendations may be based.

One of the chief concerns with respect to upland game birds has been the continuous loss of habitat as a result of increasing agricultural use of land, a problem intensified by hunting pressure in the past quarter-century. The growth of hunter interest is indicated by the number of licences and game seals sold in the province, which increased from 7,327 in 1938-39 to 44,794 in 1948-49 and 119,096 in 1958-59. During the 1950's a plateau was reached with respect to the sale of game bird licences, but the steady increase in sale of big game licences which began after World War II continues, particularly with respect to moose and deer.

Attempts have been made to develop experimental habitat areas for upland game birds by the provision of improved nesting, brooding and winter feeding areas.

Waterfowl conservation measures have been undertaken by Ducks Unlimited, an organization which is conducting 234 active projects (247,380 acres of water and 1,915 miles of shoreline) for the propagation of waterfowl. The Department of Natural Resources is co-operating with these activities. Some attempts have been made to reduce migratory bird depredation problems by providing "lure" crops in limited locations and by the establishment of restricted hunting areas to provide protection in fall resting areas for migratory birds.

The increase in hunting interest is indicated by growth of membership in the province's sportsmen's organizations, and interest in wildlife in general by province-wide membership in various nature study groups such as the Saskatchewan Natural History Society. One of the more dramatic indications is the public attention given to the annual migration

through the province of North America's wild whooping cranes. Through the Saskatchewan Museum of Natural History and publications of the Conservation Information Service, the Department of Natural Resources endeavours to promote public interest in the principles of conservation and resource utilization.

Poisoning control programs have been instituted to replace the bounty system as a means of controlling predators. The objective of the poisoning program is definitely not eradication of certain predatory species, but reduction of populations to more manageable levels. Most hawks and owls are now protected through the game regulations.

Research studies designed to improve management techniques are conducted by five wildlife ecologists employed by the Department of Natural Resources. The province contains 149 game preserves with a total area of approximately 14,000 sq. miles. Last Mountain Lake Bird Sanctuary, reputedly the first established in North America, is located in southern Saskatchewan. Provincial parks in the southern part of the province are utilized as game management areas to permit fuller recreational use by the public.

Alberta.—In Alberta, the management of bird and animal wildlife is a function of the Department of Lands and Forests. In 1961-62, this activity was the incumbency of five permanent wildlife biologists who were assisted in the conduct of their program by many district officers of the provincial Forest Service and the Fish and Wildlife Division. The field officers reported on the distribution, reproductive success, mortality, age and sex structures, and diseases and parasites of game birds and wild ungulate populations and assisted in the accumulation of data on other features of wildlife biology and ecology. Significant contributions to the understanding of ecology and population dynamics were also made by university students and staff at the Alberta Biological Station.

Conservation measures are considered to be synonymous with proper wildlife management. Under these terms of reference, many species of wildlife were intensively studied during the 1961-62 fiscal year. Research projects on blue grouse, ptarmigan, Merriam's turkey, ruffed grouse, pheasant, sharptail, waterfowl, muskrat, pronghorn antelope, elk, moose, whitetail deer, caribou, bison, Rocky Mountain goat and bighorn sheep were conducted with a view to obtaining more usable data on natality, mortality, population dynamics and other biological features. Range condition studies produced information that, when considered with wild ungulate densities, formed the reference level from which season lengths and recommended harvests were established. The prime objective of conservation is the maintenance of game numbers in a compatible position with the abilities of different ranges to support game animals, thus assuring the continuation of wildlife population levels.

British Columbia.—Control over the trapping of fur bearing animals in British Columbia has been in effect since 1926, when a registered trapline system was instituted covering all lands except private property, National Parks, Indian reserves, municipalities and certain other reserved areas. Under this system, trappers are granted exclusive rights over designated areas and are required to submit annual reports of their catch, such returns providing an accurate check of the fur taken from each district. Trapping on private property is permitted, provided the trapper secures a special firearms licence, which must be held by all trappers and entitles the holder to hunt all types of large and small game.

Fur bearers in the province include bear, badger, beaver, fisher, fox, lynx, marten, mink, muskrat, otter, raccoon, skunk, squirrel, weasel and wolverine. Wolf, coyote, cougar and bobcat are classed as predators and there is no closed season on them or on raccoon, skunk and wolverine. Seasons on black or brown bear are generally year round although closed seasons are in effect in certain areas. Foxes have become so numerous in certain parts of the province that they also may be considered as predators, and beavers are so prevalent in some areas that it is necessary to move them to other districts.

Beaver is the most important source of revenue, followed by mink and squirrel. However, the day of the professional trapper seems to be gone. Few people now make their living solely or even mainly through the trapping of fur bearing animals. On the

other hand, there is a steady increase in recreational hunting and fishing, as evidenced by the number of licences issued to residents and non-residents. In 1961 the number of resident firearms licences issued was 115,796, the number of resident angler's licences 139,945, non-resident firearms licences 3,937, and non-resident angler's licences 46,048, resulting in a provincial revenue of \$1,656,061. The amount of game taken during the hunting season by resident sportsmen was estimated as follows: deer 67,000, moose 15,000, elk 3,500, mountain goat 1,900, mountain sheep 1,000, caribou 1,000, waterfowl 377,000, grouse 413,000, and pheasant 57,000.

Among the wildlife management programs conducted by the Department of Recreation and Conservation is included the rehabilitation of lakes through the use of toxaphene which kills off all fish species, permitting later planting of desirable species such as rainbow trout. More than 100 lakes have been brought back into trout production in recent years by this technique. Also included is the establishment of longer and more widespread open seasons on antlerless deer and moose. Such seasons are carefully studied to assess their effects upon the stands of game but, when properly applied, they allow a greater harvest of moose and deer. A limited open season on hen pheasants was established for the first time in 1962. Although at first there was some public criticism of the shooting of female birds, the fact that such open seasons are based on sound biological findings is now being realized.

PART III.—CLIMATE AND TIME ZONES

Section 1.—Climate*

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are not unique but are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean.

* Prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data. A very brief outline of the climate of Canada by region is given in the 1962 edition, pp. 39-40.

The following table gives temperature and precipitation data for typical stations in the various regions of Canada. Temperatures in this table refer to observations taken in a thermometer shelter which has been placed in a representative location with the thermometer bulbs four feet above the surface of the ground. Mean January and July temperature data are based on records over the 30-year period from 1921 to 1950 except for far northern stations where the available period of record is shorter. After an average temperature is obtained for each day in January over a 30-year period, the mean January temperature may be arrived at by striking a mean of these 930 daily values. The mean July temperatures may be obtained in a similar manner. The highest and lowest temperatures on record refer to the absolute extremes for the entire period of record at each station. Average dates are shown for the last occurrence in spring of a temperature of 32°F. or lower and for the first occurrence in autumn of freezing temperatures at the four-foot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught and then measured to one-hundredth of an inch with a simple measuring device. Freshly fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Total precipitation values as shown in the table are the sum of the total rainfall and one-tenth of the total snowfall. For the purposes of this table, a day with precipitation is one on which at least one-hundredth of an inch of rain or one-tenth of an inch of snow has fallen.

Temperature and Precipitation Data for Typical Stations in the Various Districts

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F. or Lower)		Total (All Forms) ¹	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
Newfoundland—							in.	in.	
Island of Newfoundland—									
Belle Isle.....	11.0	48.6	73	—31	June 19	Sept. 24	33.19	98.8	152
Gander.....	18.6	61.6	96	—15	June 1	Oct. 3	39.50	119.2	194
St. Andrew's.....	22.9	59.7	81	—11	June 11	Sept. 28	42.47	54.8	156
St. John's.....	24.0	60.0	93	—21	June 2	Oct. 10	53.09	114.1	201
Labrador—									
Cartwright.....	4.2	55.2	97	—36	June 26	Sept. 9	40.31	200.6	165
Goose.....	0.8	60.5	100	—38	June 10	Sept. 14	28.66	140.9	164
Nain.....	—2.5	50.4	91	—37	July 3	Aug. 12	29.56	128.2	121
Maritime Provinces—									
Prince Edward Island—									
Charlottetown.....	18.8	66.6	98	—27	May 16	Oct. 14	43.13	112.7	156
Nova Scotia—									
Annapolis Royal.....	24.4	65.3	91	—13	May 20	Oct. 6	41.35	68.0	144
Halifax.....	24.4	65.0	99	—21	May 13	Oct. 12	54.26	64.1	159
Sydney.....	22.7	65.0	98	—25	May 29	Oct. 13	50.61	96.6	169
Yarmouth.....	27.0	61.6	86	—12	May 7	Oct. 14	47.08	83.1	151
New Brunswick—									
Chatham.....	12.7	66.5	102	—43	May 21	Sept. 28	36.71	88.5	152
Grand Falls.....	8.7	64.7	98	—46	May 28	Sept. 20	38.42	106.3	101
Moncton.....	16.1	65.8	99	—33	June 1	Sept. 14	40.97	108.4	130
Saint John.....	19.8	61.8	93	—22	May 4	Oct. 16	47.39	80.0	170
Quebec—									
Northern—									
Fort Chimo.....	—13.0	52.6	90	—51	June 25	Aug. 14	16.37	68.8	157
Knob Lake.....	—11.9	55.1	88	—59	June 21	Aug. 30	27.55	128.6	193
Nitchequon.....	—12.6	55.9	90	—57	June 14	Sept. 13	30.88	116.3	193
Port Harrison.....	—14.8	46.8	86	—57	July 5	Aug. 20	14.64	73.3	134

¹ Total rainfall and one-tenth of the total snowfall.

Temperature and Precipitation Data for Typical Stations in the Various Districts—continued

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F. or Lower)		Total (All Forms) ¹	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
Quebec—concluded									
Southern—									
Bagotville.....	2.9	63.8	96	-46	June 1	Sept. 16	38.72	130.3	160
Father Point.....	10.8	58.4	90	-32	May 22	Sept. 26	33.56	108.0	147
Montreal.....	15.4	70.4	97	-29	Apr. 28	Oct. 17	41.80	100.8	160
Quebec.....	12.0	67.6	97	-34	May 11	Oct. 5	44.76	123.7	171
Sept Îles.....	3.2	59.2	90	-46	June 4	Sept. 10	41.94	165.5	143
Sherbrooke.....	14.8	67.8	98	-42	May 18	Sept. 23	38.93	97.2	176
Ontario—									
Northern—									
Kapuskasing.....	-1.3	62.8	101	-53	June 14	Sept. 5	27.99	95.8	142
Port Arthur.....	7.6	63.4	104	-42	June 4	Sept. 7	31.62	93.4	137
Fort William.....	-1.3	65.0	103	-51	June 1	Sept. 15	27.45	74.5	157
Sioux Lookout.....	-11.9	61.2	95	-54	June 16	Sept. 15	24.74	85.1	146
Trout Lake.....									
Southern—									
London.....	22.5	69.6	106	-27	May 16	Oct. 1	38.24	77.0	160
Ottawa.....	12.0	68.6	102	-38	May 11	Sept. 29	34.89	80.5	145
Parry Sound.....	16.2	67.8	100	-39	May 15	Oct. 2	37.87	118.2	162
Toronto.....	24.5	70.8	105	-26	May 3	Oct. 15	30.93	54.6	143
Windsor.....	24.5	73.0	101	-27	Apr. 29	Oct. 15	33.43	35.8	139
Prarie Provinces—									
Manitoba—									
Churchill.....	-17.3	54.7	96	-57	June 28	Aug. 30	15.01	55.2	102
The Pas.....	-6.2	64.9	100	-54	May 30	Sept. 9	16.98	53.2	102
Winnipeg.....	0.6	65.4	108	-54	May 27	Sept. 15	19.72	49.4	119
Saskatchewan—									
Regina.....	2.3	66.6	110	-56	June 5	Sept. 6	15.09	40.1	113
Saskatoon.....	0.8	66.4	104	-55	May 24	Sept. 13	14.40	36.1	104
Swift Current.....	9.8	67.2	107	-54	May 27	Sept. 10	14.89	40.2	112
Alberta—									
Beaverlodge.....	9.7	60.2	98	-54	May 30	Sept. 1	17.32	68.2	127
Calgary.....	15.8	62.4	97	-49	June 3	Sept. 3	17.47	57.0	105
Edmonton.....	7.7	62.9	99	-57	May 29	Sept. 6	17.63	52.9	126
Medicine Hat.....	13.7	70.2	108	-51	May 15	Sept. 18	13.55	41.6	98
British Columbia—									
Pacific Coast and Coastal Valleys—									
Estevan Point.....	40.4	56.3	80	7	Apr. 3	Nov. 12	107.66	10.2	203
Langara.....	37.3	54.2	78	6	Apr. 2	Dec. 2	67.79	20.8	255
Prince Rupert.....	35.7	56.2	88	-6	Apr. 19	Nov. 3	94.00	32.1	229
Vancouver.....	37.6	64.4	92	2	Apr. 1	Nov. 5	56.83	24.5	179
Victoria.....	39.2	60.0	95	-2	Feb. 28	Dec. 7	26.18	10.1	149
Southern Interior—									
Glacier.....	13.6	57.9	98	-32	June 10	Sept. 8	52.24	342.5	192
Invermere.....	13.3	63.1	99	-43	May 27	Sept. 12	11.52	30.2	82
Kamloops.....	22.3	70.4	107	-37	Apr. 25	Oct. 8	10.14	29.4	83
Penticton.....	26.7	68.7	105	-16	May 7	Oct. 3	11.50	25.4	109
Princeton.....	17.1	63.1	107	-49	June 11	Sept. 4	13.30	49.2	105
Central Interior—									
Barkerville.....	16.0	54.5	96	-52	June 25	Aug. 16	43.83	220.4	187
McBride.....	17.2	59.2	100	-50	June 18	Aug. 23	19.73	74.2	125
Prince George.....	14.6	59.6	102	-58	June 17	Aug. 24	22.16	66.5	166
Smithers.....	15.7	58.8	92	-47	June 22	Aug. 11	19.09	67.1	147

¹ Total rainfall and one-tenth of the total snowfall.

Temperature and Precipitation Data for Typical Stations in the Various Districts—concluded

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F. or Lower)		Total (All Forms) ¹	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
British Columbia— concluded									
Northern Interior—									
Atlin.....	4.6	53.8	87	-54	June 11	Sept. 4	11.01	46.4	70
Dease Lake.....	3.6	54.4	93	-60	July 2	Aug. 13	15.29	66.7	144
Fort Nelson.....	-7.3	61.7	98	-61	May 24	Sept. 2	16.37	66.8	115
Fort St. John.....	5.2	61.1	92	-53	May 25	Sept. 1	14.94	62.5	122
Smith River.....	-6.0	56.8	92	-74	July 2	Aug. 11	18.14	75.4	151
Yukon Territory—									
Dawson.....	-16.0	59.8	95	-73	June 4	Aug. 21	12.73	52.5	119
Snag.....	-13.2	56.8	89	-81	June 17	Aug. 7	13.82	52.8	109
Watson Lake.....	-7.6	58.7	93	-74	June 1	Aug. 25	16.75	77.0	141
Whitehorse.....	5.2	56.2	91	-62	June 10	Aug. 27	10.67	43.7	92
Northwest Territories—									
Mackenzie Basin—									
Fort Good Hope.....	-21.0	59.8	95	-79	June 14	Aug. 6	12.18	57.3	110
Fort Simpson.....	-15.1	62.4	97	-69	June 4	Aug. 28	12.13	45.2	97
Hay River.....	-11.6	59.8	96	-62	June 11	Sept. 7	12.02	46.8	99
Barrens—									
Baker Lake.....	-30.0	50.5	82	-58	July 2	Aug. 24	6.74	21.8	71
Chesterfield.....	-25.6	48.0	86	-60	June 30	Sept. 4	11.12	51.5	96
Coppermine.....	-19.0	49.0	87	-58	June 28	Aug. 18	10.87	55.5	105
Arctic Archipelago—									
Clyde.....	-15.3	40.1	71	-47	2	2	10.04	69.4	89
Eureka.....	-36.3	41.9	67	-63	June 25	Aug. 10	2.61	13.9	50
Frobisher Bay.....	-15.8	45.7	76	-49	June 24	Aug. 27	13.53	73.1	104
Mould Bay.....	-28.9	38.0	59	-63	2	2	3.25	19.1	74
Resolute.....	-28.2	39.7	60	-61	2	2	5.28	28.0	93

¹ Total rainfall and one-tenth of the total snowfall.² No appreciable period free from frost.

Section 2.—Meteorological Observing Stations in Canada*

In 1962, official meteorological observations were taken and recorded at some 2,133 weather reporting stations in Canada. There are several different classes of stations, ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative precipitation observing stations where a volunteer observer makes daily observations of rainfall and snowfall. While there are vast areas of the country where the weather stations are several hundred miles apart, most of the settled parts of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

At most of the 265 first-order synoptic stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts are made every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and then at each month-end the manuscript

*Prepared by the Meteorological Branch, Department of Transport, Toronto.

reports are sent by mail to Meteorological Branch Headquarters for use in compiling climatic statistics. At some 90 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 35 stations are operated in a similar manner by the different Armed Services; 70 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, mainly by various transportation and communications companies.

Twice daily at 34 locations throughout the country, complete upper air observations are made from the surface to altitudes upwards to 100,000 feet. Pressure, temperature and humidity measurements are determined by radiosonde instruments carried aloft by balloons and the information reported by radio to the ground receiving station; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 26 other locations where the winds in the lower layers of the atmosphere are determined by observing free balloon drift by means of a theodolite or by radar. As in the case of the first-order synoptic reporting stations, these upper air weather observations are made available immediately to forecast offices for weather forecasting purposes, and the manuscript reports are collected at Meteorological Branch Headquarters for compilation of climatic statistics.

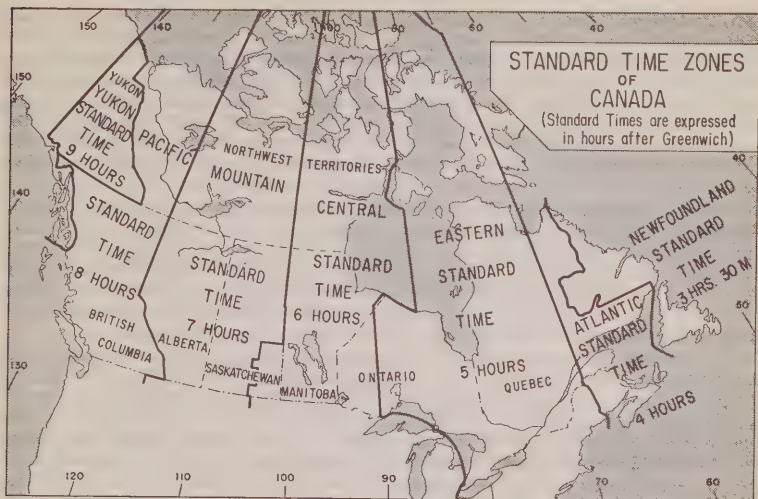
About 1,153 weather observing stations in Canada are classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of these observers serve on a voluntary basis and willingly spend several hours a month on their hobby. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

There are about 659 stations classified as precipitation stations where rainfall and snowfall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are about 45 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the number of weather stations in Canada has been growing at a rate of more than 50 a year for the past decade and thus a steadily increasing climatic intelligence is assisting Canadians in all economic pursuits.

Section 3.—Standard Time and Time Zones

Standard time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24, each zone extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° longitude apart. The basis of world time is Greenwich time and all other time zones are a definite number of hours behind Greenwich.

Canada has seven time zones, the most easterly being Newfoundland standard time, three hours and thirty minutes behind Greenwich time. In the west, Pacific standard time, used throughout British Columbia and part of the Northwest Territories, is eight hours behind Greenwich, and Yukon standard time, used throughout the Yukon Territory, is nine hours behind Greenwich. Some municipalities adopt the time used by the local railways which, in certain cases, differs from the standard. There are also villages that adopt such time as seems best to suit their convenience but in general the legal boundaries of the different time zones are actually in use.



Legal Authority for the Time Zones.—Most of the regulations made in Canada concerning standard time have been passed by the provincial legislatures and the Northwest Territories Council. Legislation, besides determining the boundaries of zones, regulates such matters as the times of coming into effect or expiration of Acts, ordinances, contracts and agreements, times of opening and closing registration offices, law courts, post offices and other public offices, times of open or close seasons for hunting and fishing, and times of opening and closing business houses and places of amusement.

Daylight Saving Time.—For some years before World War I there was active propaganda, particularly in the cities, for the use during the summer months of an earlier time usually referred to as 'daylight saving time', one hour ahead of standard time. It was considered from the economic as well as from the health point of view that people in industrial towns and cities would gain by having longer periods of sunlight at their disposal for recreation. Canada adopted daylight saving time in 1918 but the Canadian Act lapsed at the end of that year. Since that date, however, most cities and towns have adopted daylight saving for varying periods in the summer months. Several provinces have recently placed legislation on their statute books making daylight saving time mandatory, either throughout the province or in certain areas.

PART IV.—GEOPHYSICS AND ASTRONOMY

Section 1.—Geophysics*

Geophysics is the study of the earth, including the oceans and atmosphere, by the methods of physics. Because it extends over such a very wide range of topics, it is generally divided into seven fields, each a well developed science in itself. Of these, one of the oldest is geodesy, the study of the earth's shape, and of variations in the gravitational attraction of the earth, which are related to the shape. Seismology originally was the

* Prepared by Dr. G. S. Garland, Physics Department, University of Alberta, Edmonton.

study of earthquakes but it now includes investigations of the earth's interior by means of vibrational waves, which may be produced by explosions as well as by earthquakes. Meteorology deals with the atmosphere, and hydrology deals with the surface waters of the earth, excluding the oceans but including ice and snow. The study of the oceans, their currents and bottom profiles, forms a subject in itself—oceanography. Geomagnetism is involved with the earth's magnetic field and with many related phenomena, such as the ionosphere and the radiation belts that surround the earth. Finally, volcanology is the study not only of existing volcanoes but of volcanoes of the past and of the rocks they produced.

The seven fields all deal with the investigation of some major property of the earth. They may be considered as pure sciences but it is apparent that they all have applications that are vital to modern life. The findings of geodesy on the precise shape of the earth are needed for accurate maps. The search for minerals and oil by scientific methods makes use of the techniques of gravity measurements, seismology and geomagnetism. Meteorology obviously has great practical importance, and the contributions of hydrology to water supply problems and of oceanography to the fisheries are also very large.

An event of particular significance to geophysics in 1962 was the launching of the first Canadian satellite, *Alouette*. This satellite, constructed by the Defence Research Board, carried instrumentation for the study of the upper part of the region of the atmosphere known as the ionosphere. Information on the ionosphere is important in problems of radio communication and, while its lower boundary can be studied through observations made from the ground, it is only by the use of satellites that the top of it is accessible. It is appropriate, therefore, that the *Alouette* is known as a topside sounder. A second event of 1962, of particular interest to geophysicists engaged in the exploration for oil and minerals, was the meeting of the International Society of Exploration Geophysicists, held in Calgary, Alta., in September. This was the first meeting of the Society to be held in Canada and the important Canadian contribution to the program indicated the advances that have been made in the science of geophysical prospecting in this country.

The determination of precise positions and elevations, which forms the basis of geodesy, was continued by the Geodetic Survey, Department of Mines and Technical Surveys. Networks of triangulation, to provide the framework for accurate mapping, were extended in the Northwest Territories and in Quebec. An arc of triangulation was completed from Sept Îles to Schefferville in Quebec, and on to Nain in Labrador, to provide the first accurate positions in this remote but developing region. Lines of precise levels were extended in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Quebec. One of the problems of the Geodetic Survey has been the designing of permanent bench marks to provide a record of elevations in muskeg areas. A new type, consisting of a tablet clamped to a copper rod, which can be driven to a depth of over 100 feet, is now being used and it appears that it will successfully withstand frost action and other possible disturbance. Measurements of the earth's gravity also provide information on the shape of the earth and on the location of concealed underground structures. The Dominion Observatory, Department of Mines and Technical Surveys, continued its active program of determinations throughout Canada. Readings were taken over a large area of the Gulf of St. Lawrence, using a special gravity meter lowered to the bottom and read from a ship. The Observatory began the distribution of a series of map sheets on which the results of gravity surveys are plotted. These will be of considerable use to groups who wish to use the information for geological interpretations.

The most detailed knowledge on the interior of the earth comes from the study of waves from earthquakes. The Dominion Observatory maintains a network of seismograph stations for recording these waves; eleven stations were in operation during 1962 and five others were under construction. In addition, a station at Montreal was operated by Collège Jean-de-Brébeuf and one near Edmonton was completed by the University of Alberta. In addition to providing information on the earth's interior, the recording of earthquake waves is important for determining the possibility of earthquake damage to structures in different parts of the country. The Department of Mines and Technical

Surveys co-operates with the Division of Building Research, National Research Council, in defining regions of seismic activity throughout the country, in order that building specifications may be adapted to local conditions. As part of the International Upper Mantle Project, a number of studies of the crust and underlying mantle were carried on using seismic waves from large explosions. Groups from the Universities of British Columbia, Alberta, Manitoba and Toronto, and Dalhousie University, in addition to the Polar Continental Shelf Project, Dominion Observatory and Geological Survey, carried out investigations of this kind. Information on the thickness and composition of the crust is becoming available for many parts of Canada as a result of this work. Similar operations, conducted in more detail over limited regions, form the chief geophysical method used in the search for oil and natural gas. Laboratory measurements on the physical properties of rocks under high pressures are important for the understanding of the state of the earth's interior. Although this has been a neglected field in Canada, experimental work is now in progress at the Mines Branch, Department of Mines and Technical Surveys, and at the University of Western Ontario.

In meteorology, the routine operations of the Meteorological Branch, Department of Transport, were continued. The Branch also conducts research in meteorology and supports research projects at universities through a series of grants. The only department of meteorology in a Canadian university is at McGill University, Montreal, but an increase in meteorological research is notable at other universities, such as Toronto, where it is conducted within the Department of Physics. Canada co-operates with other nations in the exchange of weather information and in the standardization of weather reporting, by membership in the World Meteorological Organization.

Measurements and research in hydrology continue to expand, as the need to examine the extent of water resources becomes apparent in many parts of the country. The overall study of water resources is the responsibility of the Water Resources Branch, Department of Northern Affairs and National Resources, but studies in particular areas are conducted by provincial research councils, universities and groups, such as the Prairie Farm Rehabilitation Administration. Research was continued on such topics as estimating run-off from snow cover, evaporation from reservoirs, and the relation between meteorological conditions and floods. The problem of locating ground-water by surface exploration often brings other geophysical methods into play. The Geological Survey continued an investigation of local seismic measurements for the purpose of detecting water-bearing structures, and the Saskatchewan Research Council has had success using electrical measurements on the surface to locate buried river channels.

Perhaps no field of geophysics has grown more rapidly in Canada during recent years than glaciology. Glaciers in the western mountains are important as a source of water for many rivers, while those in the Arctic provide a record of climatic change. In 1962 field parties investigated glaciers in the Rocky, Selkirk, Monashee, Cariboo and Coast Mountains of Western Canada, and on Baffin, Devon, Melville, Axel Heiberg, Meighen and Ellesmere Islands of the Canadian Arctic. These groups represented the Defence Research Board, the Department of Mines and Technical Surveys, several universities, and other organizations such as the Arctic Institute of North America and the American Geographical Society. The work included accurate mapping of existing glaciers, determination of ice thickness, studies of glacial flow, and the breaking up of ice shelves to form ice islands.

Investigations of the earth's magnetism and its changes with time are important for a number of reasons. The use of the compass in navigation is an obvious one but magnetic measurements can also be used to study the earth's interior and to locate mineralized bodies in the earth's crust. Short-period disturbances in the earth's magnetism result from the bombardment of the earth by electrically charged particles from the sun. These disturbances can cause serious disruption of radio communication, particularly in northern regions. The strength of the magnetic field over Canada is determined by measurements, both airborne and ground, conducted by the Dominion Observatory, which also operates observatories to record the changes of the field with time, at Agincourt, Ont., Meanook, Alta., and Baker Lake, Resolute, Alert and Mould Bay, N.W.T. Airborne

magnetometer surveys for geological purposes were continued by the Geological Survey of Canada. The maps that have been prepared from the surveys for many parts of the country have proven to be very valuable in mineral exploration. Research into the magnetic disturbances caused by external influences was continued by several universities and the Defence Research Board. A finding of particular interest was the simultaneous occurrence of aurorae, and associated magnetic disturbance, near the north and south magnetic poles. This resulted from special observations in Northern Canada and in Antarctica.

In the field of upper atmospheric physics, the launching of the *Alouette*, mentioned on p. 58, was of great significance and important also were the re-openings of the Prince Albert Radar Laboratory and the Churchill rocket launching facility. Both of these had been damaged by fire in 1961. A number of groups in Canada, including the National Research Board, Defence Research Board and several universities, are proceeding with the development of instruments to be used in rockets which will be launched from Churchill. Canadian universities, such as the University of Saskatchewan, have taken advantage of their position in the zone of most frequent auroral displays to specialize in the study of this phenomenon.

The study of the oceans bordering Canada is carried on by the new Marine Services Branch, Department of Mines and Technical Surveys, the Fisheries Research Board, the Defence Research Board, and by university groups such as the Institute of Oceanography at the University of British Columbia and Dalhousie University. The Bedford Institute of Oceanography, under the Marine Services Branch, was opened in October 1962. It will be an important centre for oceanographic work, with docking facilities for 10 ships and large laboratory space. Canadian oceanographic ships continued to extend their operations northward, and the *John A. Macdonald* of the Canadian Coast Guard reached a point only 500 miles from the north geographic pole.

The interest of Canadian groups in determining the ages of rocks by radioactive methods continued to expand. Because so many of the rocks exposed in Canada are of Precambrian age and carry no fossils, physical methods for determining the ages have become very important in the geological subdivision of the country. These methods are based on the precise measurement of the quantity in the rocks of certain elements formed by radioactive decay. Instruments suitable for this work are now in operation at the Geological Survey and at the following universities: Toronto, British Columbia, Alberta, St. Francis Xavier, McMaster and Carleton.

The increasing diversity of geophysics in Canada, both in the general study of the earth, oceans and atmosphere, and in geophysical exploration, has meant a continued demand for students with degrees in the subject. Nearly all Canadian universities now offer undergraduate training in some branch of geophysics and it will be apparent from the preceding discussions that research in geophysics is also being carried on at most of them. This research is largely supported by a system of grants awarded by the National Research Council and the Defence Research Board, with some support provided by industry and other agencies.

Section 2.—Astronomy

The modern era of astronomy in Canada may be said to have begun in 1905 with the completion of the Dominion Observatory at Ottawa, the national observatory of Canada. Prior to that time, an astronomical observatory established in 1851 at Fredericton, N.B., was used for a short time to determine the longitude of that centre and for general astronomical purposes; it has been rehabilitated as a historic monument. Other small observatories were established, one at Quebec City in 1854 and one at Kingston in 1875. Astronomical instruments were to be associated with the Magnetic Observatory built by the British Government at Toronto in 1839 but there is no record of their being set up until 1881. A small observatory established at McGill University in 1879 was used for many years for time observations.

Today, an increasing number of universities and other scientific organizations are devoting a substantial part of their efforts to the study of astronomy and astrophysics. The Dominion Observatory at Ottawa, which with its sister institutions is administered by the Department of Mines and Technical Surveys, specializes in the astronomy of position, solar physics, meteoric astronomy and various branches of geophysical work. This Observatory also maintains a subsidiary (the Dominion Radio Astrophysical Observatory) near Penticton, B.C., for the study of radio astronomy. Also associated in the same group is the Dominion Astrophysical Observatory at Victoria, B.C. This Observatory, which operates two large optical reflectors, devotes its efforts to the motions and physical characteristics of the stars and of inter-stellar material. Other Federal Government institutions carrying out meteoric and radio astronomy, including a study of the upper atmosphere by essentially astronomical methods, are the National Research Council and the Defence Research Board. Solar observations at the Algonquin Radio Observatory of the National Research Council, located in Algonquin Park 150 miles west of Ottawa, are now under way. The program is being extended to galactic and extragalactic studies with the addition of several new radio telescopes, including one under construction by the University of Toronto. At Springhill Meteor Observatory, near Ottawa, studies of meteors and the aurora are carried out.

The David Dunlap Observatory of the University of Toronto carries on an active program of astrophysical research as well as the teaching of astronomy. It performs not only the functions of a privately financed and administered research institution, but is also the nucleus of the Department of Astronomy of the University of Toronto. The Physics Department of Queen's University in Kingston, which devotes considerable effort to the teaching of astronomy, has recently installed a new optical telescope and for some time has been carrying on advanced work in the science of radio astronomy. The University of Western Ontario maintains a small but active Department of Astronomy and several other Canadian universities give some instruction in astronomical science.

CHAPTER II.—CONSTITUTION AND GOVERNMENT*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning ninety-six years ago in the enactment (Mar. 29, 1867) by the British Parliament of the British North America Act, 1867. Fashioned largely out of the Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, the British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada".

While the new nation that came into being on July 1, 1867 was a federation comprised of four provinces, namely, Ontario, Quebec, New Brunswick and Nova Scotia, Sect. 146 of the Act provided for the admission into the Union of the Crown colonies of Prince Edward Island and Newfoundland on the Atlantic and the united (1866) island and mainland colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Bay Company territory in the North West known as "Rupert's Land and the North-Western Territory". Following the negotiation of an agreement on terms comprising the Company's surrender of its authority and territories to the Crown (which was

* Except where otherwise indicated, the information in this Chapter has been brought up to the date of Apr. 30, 1963. Certain changes occurring between that date and the date of going to press will be found in an Appendix to this volume. Also, official appointments made up to the date of going to press will be found in Chapter XXVI (see Index).

to transfer them at once to Canada) and the retention of one-twentieth of the land of the fertile belt (the southern territories) with designated blocks of land around its trading posts and a Canadian cash payment of £300,000, the new nation of Canada was ready to expand westward with considerable momentum across the Continent to the Pacific.

The acquisition by Canada of Rupert's Land and the North-Western Territory enabled the Red River settlement, after a few months of disturbance, to receive limited provincial establishment under the name of "Manitoba" in 1870; provided the Federal Government with the public lands needed to help subsidize a transcontinental railway linking the Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to begin the Canadian Pacific Railway within two years and to complete it within ten years of the date of union, July 20, 1871; and laid, through the provision of millions of acres of public lands, the land and economic bases for the Federal Government's adoption of a free-homestead policy for the Canadian prairies that, in conjunction with the completion of the Canadian Pacific Railway and the launching of other railway lines, brought wave after wave of settlers into the Northwest Territories in such numbers as to justify the creation of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the Northwest Territories south of the 60th parallel of north latitude. Although provision for their entry was included in the British North America Act, 1867, the Province of Prince Edward Island held back from the Union until 1873 and Newfoundland became Canada's tenth province on Mar. 31, 1949.

The Constitution of Canada, which had a corporate beginning in 1867, combines, in a set of rules determining the creation and operation of the machinery or institutions of government, the Cabinet system of responsible government (based on an inheritance from Britain) with a Canadian adaptation of federalism (as then practised in the United States for eighty years). A written document, the British North America Act of 1867, contains a substantial portion of Canada's Constitution and this Act, with its various amendments,* is popularly held to be the Canadian Constitution. There is, however, another and perhaps more important part which appears, through the evolutionary processes of historical growth, in various guises including well-established usages and conventions found in the unwritten provisions of the Constitution.

Thus, the British North America Act is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other British statutes (such as the Statute of Westminster, 1931) and Orders in Council (notably those admitting various provinces and territories to the federation), statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the Royal Style and Titles, the Governor General, the Senate, the House of Commons, the creation of courts, the establishment of government departments, the franchise, elections, and also statutes of provincial legislatures relating to provincial constitutional institutions and government matters. Federal and provincial Orders in Council, legally authorized by their respective statutes, provide further constitutional material as do the decisions of the courts which interpret the British North America Act and all ordinary statutes and indeed possess the power to set aside any laws which they hold to be *ultra vires* or beyond the jurisdiction of the enacting legislative bodies, whether federal or provincial. Moreover, the Canadian Constitution comprises, in addition to the statutory law and its judicial interpretation, substantial sections of the common law, unwritten constitutional usages and conventions and principles of democratic government which were transplanted from Britain over two hundred years ago and since then have been thriving and evolving in the Canadian environment. For example, the Cabinet system of responsible government (see pp. 67-69)

* See *A Consolidation of The British North America Acts 1867 to 1962*, prepared by Elmer A. Driedger (Queen's Printer, Ottawa, 1966, 50 cents).

and its functioning through close identification of the executive and the legislative powers (that is, of the Cabinet and the House of Commons) is not mentioned in the British North America Act but derives from an unwritten convention of the Constitution.

Although the essential principles of Cabinet government are based in custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the British North America Act. Apart from the creation of the federal union, the dominant feature of the Act and indeed of the Canadian federation was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest (see p. 72 and p. 80).

Unlike the written constitutions of many nations, the British North America Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (clause 133) and special safeguards with respect to sectarian or denominational schools. Such vital rights as freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the British North America Act but rather depend on the statute law and the common law inheritance. Additional security of these rights may be expected to flow from the recent passage of a Canadian Bill of Rights—An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c. 44), assented to Aug. 10, 1960.

No provision was made in the British North America Act of 1867 for amendment thereof by any legislative authority in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of Members of the House of Commons and the Senate, and each provincial legislature was empowered to amend the constitution of the province except as regards the office of Lieutenant-Governor. By an amendment to the British North America Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language, and the duration of the House of Commons other than in time of real or apprehended war, invasion or insurrection.

The question of devising amendment procedure within Canada which satisfies the need to safeguard or entrench such basic provincial and minority rights as are noted immediately above and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances is one that still engages the attention of the federal and provincial governments and legislatures. The constitutional background to the problem, the present amending procedures, the attempts since 1935 to devise amending procedures, and the complexities inherent in amendment of a federal constitution are all discussed in a special article published in the 1961 Canada Year Book, pp. 51-57, entitled "Amendment of the Canadian Constitution".* The only barrier to Canada's complete control over the amendment of its own written Constitution (i.e., the British North America Act of 1867, a statute of the British Parliament) has been the inability of the Canadian people and their elected representatives in the federal and provincial fields to draft amendment procedures on which they will be in general agreement.

* Also available in reprint form from the Dominion Bureau of Statistics, Ottawa, 25 cents.



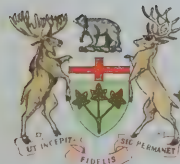
ARMORIAL BEARINGS OF CANADA

A MARI USQUE AD MARE
"From Sea to Sea"

from Verse 8 of the 72nd Psalm
"He shall have dominion from
sea to sea and from the river
unto the ends of the earth"



ARMORIAL BEARINGS AND FLORAL EMBLEMS OF THE PROVINCES AND TERRITORIES



ONTARIO



White
Trillium



NEW BRUNSWICK



Purple
Violet



QUEBEC



White
Garden
Lily



MANITOBA



Prairie
Crocus



SASKATCHEWAN



Prairie
Lily



NOVA SCOTIA



Trailing
Arbutus or
Mayflower



PRINCE EDWARD
ISLAND



Lady's
Slipper



ALBERTA



Wild Rose



YUKON TERRITORY



Fireweed



NEWFOUNDLAND



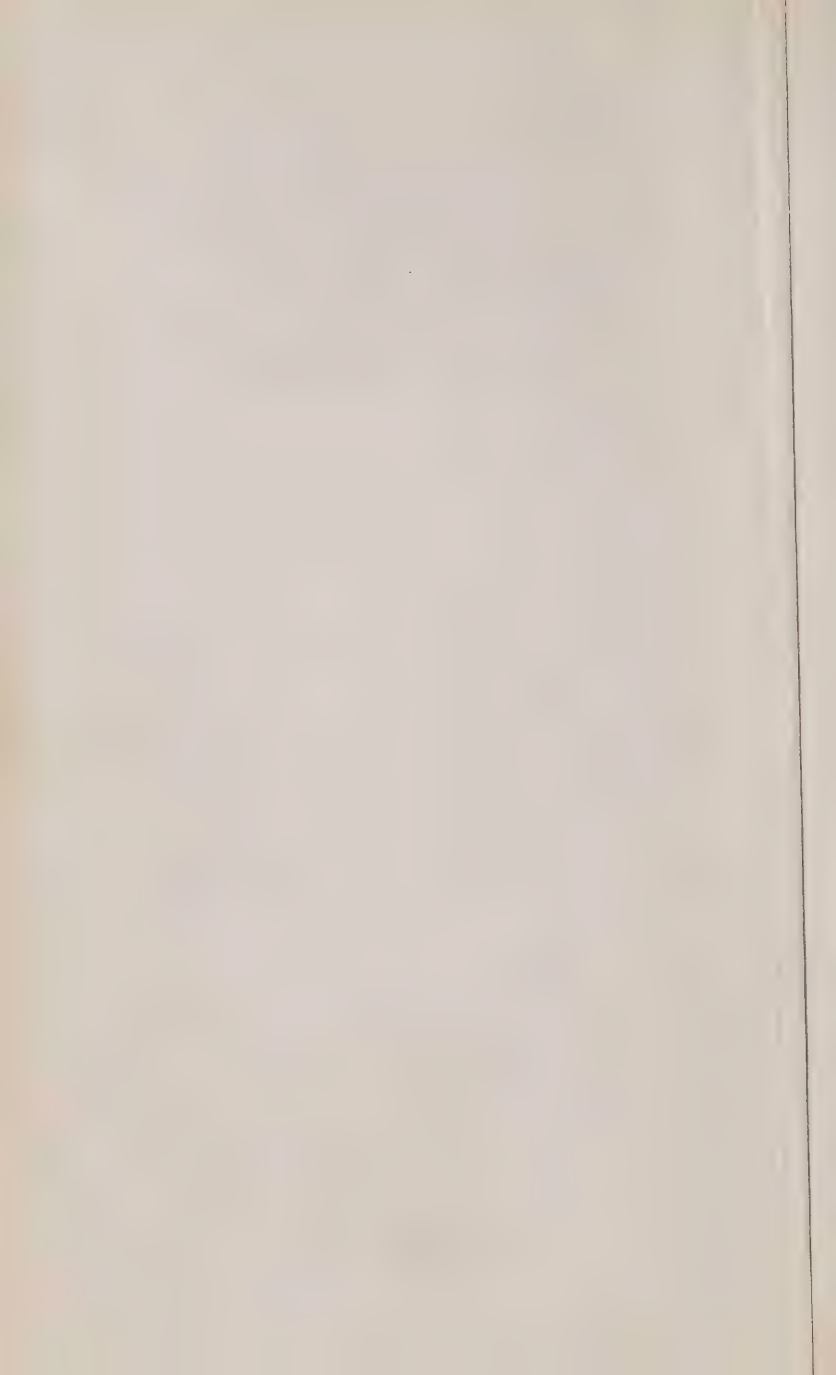
Pitcher
Plant



NORTHWEST
TERRITORIES



Mountain
Avens



1.—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
Ontario ¹	July 1, 1867	Act of Imperial Parliament—The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
Quebec ²	July 1, 1867			
Nova Scotia.....	July 1, 1867			
New Brunswick.....	July 1, 1867			
Manitoba ³	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
British Columbia.....	July 20, 1871	Imperial Order in Council, May 16, 1871..	366,255	Victoria
Prince Edward Island....	July 1, 1873	Imperial Order in Council, June 26, 1873..	2,184	Charlotte- town
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42) ..	251,700	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3).....	255,285	Edmonton
Newfoundland.....	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22).....	156,185	St. John's
Northwest Territories ⁵ ...	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), and Imperial Order in Council, June 23, 1870.....	1,304,903	Ottawa ⁷
Mackenzie ⁶	Jan. 1, 1920	Order in Council, Mar. 16, 1918.....	537,490	
Keewatin ⁶	Jan. 1, 1920		238,160	
Franklin ⁶	Jan. 1, 1920		549,253	
Yukon Territory ⁸	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
Canada.....			3,851,809	

¹The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

²Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

³Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territories were transferred to Canada effective July 15, 1870. These territories were designated as the North-West in Council of July 31, 1880 (effective Sept. 1, 1880), c. 3 and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1881 by SC 1881, c. 14. The portions were added to Manitoba, Ontario and Quebec.

⁶By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subportions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷See p. 93.

⁸The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1883, c. 50) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, c. 6) was declared to be a separate Territory.

PART II.—MACHINERY OF GOVERNMENT

Section 1.—The Federal Government

Subsection 1.—The Executive

The Crown.—The British North America Act of 1867 (Sect. 9) provides that "the Executive Government and authority of and over Canada is . . . vested in the Queen". The functions of the Crown, which are substantially the same as those of the Queen in relation to the British Government, are discharged in Canada by the Governor General in accordance with established principles of responsible government.

The Queen.—The personal participation of the Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, the Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, the Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of the Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position, and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 29, 1953. The title of the Queen, so far as Canada is concerned, now is:—

"Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith"

1.—Sovereigns of Canada since Confederation, 1867

Name	Dynasty	Year of Birth	Date of Accession
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha.....	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

The Governor General.—The Governor General, appointed by the Queen as her personal representative on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of the Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North America Acts, 1867 to 1960. Acting under the recommendations of his responsible Ministers, in the Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are \$48,666 and \$100,000, respectively. In addition, other expenses of office are provided for, including the salary of the Governor General's secretary.

The present Governor General is styled His Excellency Major General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D.

2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
VISCOUNT MONCK, G.C.M.G.....	June 1, 1867	July 1, 1867
LORD LISGAR, G.C.M.G.....	Dec. 29, 1868	Feb. 2, 1869
The EARL OF DUFFERIN, K.P., K.C.B., G.C.M.G.....	May 22, 1872	June 25, 1872
The MARQUIS OF LORNE, K.T., G.C.M.G.....	Oct. 5, 1878	Nov. 25, 1878
The MARQUIS OF LANSDOWNE, G.C.M.G.....	Aug. 18, 1883	Oct. 23, 1883
LORD STANLEY OF PRESTON, G.C.B.....	May 1, 1888	June 11, 1888
The EARL OF ABERDEEN, K.T., G.C.M.G.....	May 22, 1893	Sept. 18, 1893
The EARL OF MINTO, G.C.M.G.....	July 30, 1898	Nov. 12, 1898
EARL GREY, G.C.M.G.....	Sept. 26, 1904	Dec. 10, 1904
FIELD MARSHAL H. R. H. The DUKE OF CONNAUGHT, K.G.....	Mar. 21, 1911	Oct. 13, 1911
The DUKE OF DEVONSHIRE, K.G., G.C.M.G., G.C.V.O.....	Aug. 19, 1916	Nov. 11, 1916
GENERAL The LORD BYNG OF VIMY, G.C.B., G.C.M.G., M.V.O.....	Aug. 2, 1921	Aug. 11, 1921
VISCOUNT WILLINGDON OF RATON, G.C.S.I., G.C.I.E., G.B.E.....	Aug. 5, 1926	Oct. 2, 1926
The EARL OF BESSBOROUGH, G.C.M.G.....	Feb. 9, 1931	Apr. 4, 1931
LORD TWEEDMUIR OF ELSFIELD, G.C.M.G., G.C.V.O., C.H.....	Aug. 10, 1935	Nov. 2, 1935
MAJOR GENERAL The EARL OF ATHLONE, K.G., G.C.B., G.C.M.G., G.C.V.O., D.S.O.....	Apr. 3, 1940	June 21, 1940
FIELD MARSHAL VISCOUNT ALEXANDER OF TUNIS, K.G., G.C.B., G.C.M.G., C.S.I., D.S.O., M.C., A.D.C.....	Aug. 1, 1945	Apr. 12, 1946
The RIGHT HONOURABLE VINCENT MASSEY, C.H.....	Jan. 24, 1952	Feb. 28, 1952
MAJOR GENERAL The RIGHT HONOURABLE GEORGES P. VANIER, D.S.O., M.C., C.D.....	Aug. 1, 1959	Sept. 15, 1959

The Cabinet.—The Cabinet is a committee of Ministers chosen by the Prime Minister (the leader of the political party forming the Government of the Day) generally from Members of Parliament. By convention, all members of the Cabinet either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of government are generally Members of the House of Commons although there is nothing in the Constitution to prevent a Minister with Portfolio being a Senator.* However, they generally prefer to have seats in the House of Commons where all crucial legislation, by convention, is introduced and where they can offer explanations necessary to secure passage of their Estimates or legislation with which they are deeply concerned. Ministers without Portfolio (without a department to administer) can be members of either the House of Commons or the Senate. Frequently the Cabinet contains one Minister without Portfolio—usually the Leader of the Government in the Senate—and perhaps one or two others chosen for a variety of reasons such as the desirability of including certain provincial or sectional representation that might otherwise be lacking in the Ministry.

Cabinet members are selected by the Prime Minister in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department.

* Senator the Hon. Gideon Decker Robertson held the portfolio of Minister of Labour for the periods Nov. 7, 1918 to Dec. 29, 1921 and Aug. 7, 1930 to Feb. 2, 1932; Senator the Hon. Malcolm Wallace McCutcheon served as Minister of Trade and Commerce from Feb. 12 to Apr. 22, 1963.

The position of Prime Minister, the keystone of the Cabinet, is one of exceptional authority. He alone makes recommendations on the dissolution and convocation of Parliament, appointment of Privy Councillors, Cabinet Ministers, Lieutenant-Governors, Chief Justices, Senators, Speakers of the Senate and House of Commons, and Deputy Heads of departments. The Cabinet, under his leadership, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When the Cabinet (the Government) suffers defeat on a Government Bill or a vote of censure or on a motion of want of confidence in the Commons, the existing Government or Cabinet must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has been defeated in the House is granted a dissolution and is defeated in the ensuing general election, then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also eventuate as a result of a general election subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor General in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

The Prime Ministers since Confederation are listed in Table 3 and the members of the Ministry as at Apr. 30, 1963 in Table 4. Sessional and other allowances received by Cabinet Ministers are given at pp. 76-77.

3.—Prime Ministers since Confederation, 1867

Ministry	Prime Minister	Length of Administration
1	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	July 1, 1867 — Nov. 5, 1873
2	Hon. ALEXANDER MACKENZIE.....	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir JOHN JOSEPH CALDWELL ABBOTT.....	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir JOHN SPARROW DAVID THOMPSON.....	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir MACKENZIE BOWELL.....	Dec. 21, 1894 — Apr. 27, 1896
7	Rt. Hon. Sir CHARLES TUPPER.....	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir WILFRID LAURIER.....	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. ARTHUR MEIGHEN.....	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. ARTHUR MEIGHEN.....	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. RICHARD BEDFORD BENNETT.....	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. JOHN GEORGE DIEFENBAKER.....	June 21, 1957 — Apr. 22, 1963
19	Rt. Hon. LESTER BOWLES PEARSON.....	Apr. 22, 1963 — ...

4.—Members of the Nineteenth Ministry, as at Apr. 30, 1963¹

(According to precedence of Ministers)

NOTE.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of Appointment
Prime Minister.....	Hon. LESTER BOWLES PEARSON.....	Apr. 22, 1963
Minister of Justice and Attorney General.....	Hon. LIONEL CHEVRIER.....	Apr. 22, 1963
Secretary of State for External Affairs.....	Hon. PAUL JOSEPH JAMES MARTIN.....	Apr. 22, 1963
Minister without Portfolio and Leader of the Government in the Senate.....	Hon. WILLIAM ROSS MACDONALD.....	Apr. 22, 1963
Secretary of State of Canada.....	Hon. JOHN WHITNEY PICKERSGILL.....	Apr. 22, 1963
Minister of National Defence.....	Hon. PAUL THEODORE HELLYER.....	Apr. 22, 1963
Minister of Finance and Receiver General.....	Hon. WALTER LOCKHART GORDON.....	Apr. 22, 1963
Minister of Trade and Commerce.....	Hon. MITCHELL SHEAR.....	Apr. 22, 1963
Postmaster General.....	Hon. AZELLUS DENIS.....	Apr. 22, 1963
Minister of Transport.....	Hon. GEORGE JAMES McILRAITH.....	Apr. 22, 1963
Minister of Mines and Technical Surveys.....	Hon. WILLIAM MOORE BENEDICKSON.....	Apr. 22, 1963
Minister of Northern Affairs and National Resources.....	Hon. ARTHUR LAING.....	Apr. 22, 1963
President of the Queen's Privy Council for Canada.....	Hon. MAURICE LAMONTAGNE.....	Apr. 22, 1963
Minister of National Revenue.....	Hon. JOHN RICHARD GARLAND.....	Apr. 22, 1963
Associate Minister of National Defence.....	Hon. LUCIEN CARDIN.....	Apr. 22, 1963
Minister of Labour.....	Hon. ALLAN JOSEPH MACEachEN.....	Apr. 22, 1963
Minister of Public Works.....	Hon. JEAN-PAUL DESCHATELETS.....	Apr. 22, 1963
Minister of Fisheries.....	Hon. HÉDARD ROBICHAUD.....	Apr. 22, 1963
Solicitor General.....	Hon. J. WATSON MACNAUGHT.....	Apr. 22, 1963
Minister of Veterans Affairs.....	Hon. ROGER TEILLET.....	Apr. 22, 1963
Minister of National Health and Welfare.....	Hon. JUDY LAMARSH.....	Apr. 22, 1963
Minister of Defence Production.....	Hon. CHARLES MILLS DRURY.....	Apr. 22, 1963
Minister of Citizenship and Immigration.....	Hon. GUY FAVREAU.....	Apr. 22, 1963
Minister of Forestry.....	Hon. JOHN ROBERT NICHOLSON.....	Apr. 22, 1963
Minister of Agriculture.....	Hon. HARRY HAYS.....	Apr. 22, 1963
Minister without Portfolio.....	Hon. RENÉ TREMBLAY.....	Apr. 22, 1963

¹ Any changes occurring between Apr. 30, 1963 and the date of going to press will be carried in an Appendix to this volume.

Parliamentary Secretaries.—As provided by the Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, 15 Parliamentary Secretaries were appointed (one on Aug. 20, 1959 and 14 on Nov. 18, 1959) from among the Members of the House of Commons to assist the respective Ministers in such manner as each Minister may direct. In so doing, the Government revived the system of parliamentary assistantships in practice during the war and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising Members of the House might secure a degree of apprenticeship for higher public office. Parliamentary Secretaries hold office for 12 months.

On May 14, 1963, His Excellency the Governor General in Council, on the recommendation of the Prime Minister, announced the appointment of the following:—

<u>Secretary</u>	<u>Minister</u>
ALEXIS CARON.....	Prime Minister
JOHN DAVIS.....	Prime Minister
DONALD S. MACDONALD.....	Justice
JOHN B. STEWART.....	External Affairs
YVON DUPUIS.....	Secretary of State
EDGAR J. BENSON.....	Finance
JEAN-LUC PÉPIN.....	Trade and Commerce
G. ROY McWILLIAM.....	Postmaster General
JEAN-CHARLES CANTIN.....	Transport
JOHN N. TURNER.....	Northern Affairs and National Resources
JAMES A. BYRNE.....	Labour
HUBERT BADANAI.....	Public Works
CHESLEY W. CARTER.....	Veterans Affairs
STANLEY HAIDARZ (DR.).....	National Health and Welfare
JOHN C. MUNRO.....	Citizenship and Immigration
	Agriculture
BRUCE S. BEER.....	Minister without Portfolio

The Privy Council.—The British North America Act of 1867 (Sect. 11) provides for "a Council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada . . .". At present it consists of about 110 members sworn of the Council by the Governor General on the advice of the Prime Minister. Membership in the Privy Council is for life so that Privy Councillors include both former and present Ministers of the Crown as well as a number of persons who have been, from time to time as an honour, sworn as Privy Councillors; these include members of the Royal Family, past and present Commonwealth Prime Ministers, and former Speakers of the Senate and of the House of Commons of Canada. The Council seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a Committee; the membership thereof, with a few historical exceptions, is identical to that of the Cabinet of the Day. A clear distinction between the functions of the Committee of the Privy Council and the Cabinet is rarely made and actually the terms, "Council" and "Cabinet", are commonly employed as synonyms.

5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Apr. 30, 1963

President of the Privy Council.....	Hon. MAURICE LAMONTAGNE
Clerk of the Privy Council and Secretary to the Cabinet.....	R. B. BRYCE
Assistant Clerk of the Privy Council.....	A. M. HILL

NOTE.—In this list the prefix "Rt. Hon." indicates membership in the British Privy Council.

Member ¹	Date When Sworn In	Member ¹	Date When Sworn In
Hon. THOMAS ALEXANDER CRRERAR....	Oct. 12, 1917	Hon. JEAN LESAGE.....	Sept. 17, 1953
Hon. HENRY HERBERT STEVENS.....	Sept. 21, 1921	Hon. GEORGE CARLYLE MARLER.....	July 1, 1954
Hon. EDWARD JAMES McMURRAY.....	Nov. 14, 1923	Hon. ROCH PINARD.....	July 1, 1954
Rt. Hon. CHARLES VINCENT MASSEY....	Sept. 16, 1925	Hon. HERBERT J. SYMINGTON.....	Nov. 26, 1956
H.R.H. The DUKE OF WINDSOR.....	Aug. 2, 1927	Hon. LOUIS RENÉ BEAUDOIN.....	Apr. 15, 1957
Hon. DONALD MATHESON SUTHERLAND..	Aug. 7, 1930	Hon. PAUL THEODORE HELLER ²	Apr. 26, 1957
Hon. THOMAS GEROW MURPHY.....	Aug. 7, 1930	Rt. Hon. JOHN GEORGE DIEFFENBAKER.	June 21, 1957
Hon. WILLIAM EARL ROWE.....	Aug. 30, 1935	Hon. HOWARD CHARLES GREEN.....	June 21, 1957
Hon. CHARLES GAVAN POWER.....	Oct. 23, 1935	Hon. DONALD METCHEN FLEMING.....	June 21, 1957
Rt. Hon. JAMES LORIMER LESLEY.....	Oct. 23, 1935	Hon. ALFRED JOHNSON BROOKS.....	June 21, 1957
Hon. JOSEPH ENOIL MICAUD.....	Oct. 23, 1935	Hon. GEORGE HEES.....	June 21, 1957
Hon. COLIN WILLIAM GEORGE GIBSON..	July 8, 1940	Hon. LÉON BALCER.....	June 21, 1957
Hon. JOSEPH THORARINN THORSON....	June 11, 1941	Hon. GEORGE RANDOLPH PEARKES.....	June 21, 1957
Hon. WILLIAM FERDINAND ALPHONSE TURGEON.....	Oct. 8, 1941	Hon. GORDON CHURCHILL.....	June 21, 1957
Rt. Hon. LOUIS STEPHEN ST. LAURENT.	Dec. 10, 1941	Hon. EDMUND DAVIE FULTON.....	June 21, 1957
Rt. Hon. Sir WINSTON LEONARD SPENCER CHURCHILL.....	Dec. 29, 1941	Hon. GEORGE CLYDE NOWLAN.....	June 21, 1957
Hon. ANDREW GEORGE LATA McNAUGHTON.....	Nov. 2, 1944	Hon. DOUGLAS SCOTT HARKNESS.....	June 21, 1957
Hon. JOSEPH ARTHUR JEAN.....	Apr. 18, 1945	Hon. ELLEN LOUKS FAIRCLOUGH.....	June 21, 1957
Hon. LIONEL CHEVRIER ²	Apr. 18, 1945	Hon. J. ANGUS MACLEAN.....	June 21, 1957
Hon. PAUL JOSEPH JAMES MARTIN ²	Apr. 18, 1945	Hon. MICHAEL STARR.....	June 21, 1957
Hon. DOUGLAS CHARLES ABBOTT.....	Apr. 18, 1945	Hon. WILLIAM McLEAN HAMILTON.....	June 21, 1957
Hon. THOMAS VIEN.....	July 19, 1945	Hon. JAMES MAC KERRAS MACDONNELL.	June 21, 1957
Hon. WISHART McLEA ROBERTSON.....	Sept. 4, 1945	Hon. WILLIAM J. BROWNE.....	June 21, 1957
Hon. MILTON FOWLER GREGG.....	Sept. 2, 1947	Hon. PAUL COMTOIS.....	Aug. 7, 1957
Hon. ROBERT WELLINGTON MAYHEW....	June 11, 1948	Hon. JAY WALDO MONTEITH.....	Aug. 22, 1957
Rt. Hon. LESTER BOWLES PEARSON ³ ..	Sept. 10, 1948	Hon. FRANCIS ALVIN GEORGE HAMILTON.....	Aug. 22, 1957
Hon. STUART SINCLAIR GARSON.....	Nov. 15, 1948	H.R.H. The PRINCE PHILIP, Duke of Edinburgh.....	Oct. 14, 1957
Hon. ROBERT HENRY WINTERS.....	Nov. 15, 1948	Hon. RAYMOND JOSEPH MICHAEL O'HURLEY.....	May 12, 1958
Hon. FREDERICK GORDON BRADLEY....	Apr. 1, 1949	Hon. HENRI COURTEMANCHE.....	May 12, 1958
Hon. CHARLES JOST BURCHELL.....	Apr. 1, 1949	Hon. DAVID JAMES WALKER.....	Aug. 20, 1959
Hon. HUGUES LAPONTE.....	Aug. 25, 1949	Hon. JOSEPH PIERRE ALBERT SÉVIGNY.	Aug. 20, 1959
Hon. GABRIEL EDOUARD RINFRET.....	Aug. 25, 1949	Hon. HUGH JOHN FLEMING.....	Oct. 11, 1960
Hon. WALTER EDWARD HARRIS.....	Jan. 18, 1950	Hon. NOËL DORION.....	Oct. 11, 1960
Hon. GEORGE PRUDHAM.....	Dec. 13, 1950	Hon. WALTER DINDSALE.....	Oct. 11, 1960
Hon. GEORGE BLACK.....	Aug. 3, 1951	Hon. GEORGE ERNEST HALPENNY.....	Oct. 11, 1960
EARL ALEXANDER OF TUNIS.....	Jan. 29, 1952	Hon. ROBERT HENRY MCGREGOR.....	Dec. 21, 1960
Hon. JAMES SINCLAIR.....	Oct. 15, 1952	Hon. WALTER MORLEY ASELINTE.....	Dec. 28, 1961
Hon. RALPH OSBORNE CAMPNEY.....	Oct. 15, 1952	Hon. LESLIE MISCAMPBELL FROST.....	Dec. 28, 1961
Hon. WILLIAM ROSS MACDONALD ²	May 12, 1953	Hon. JACQUES FLYNN.....	Dec. 28, 1961
Hon. GEORGE ALEXANDER DREW.....	May 12, 1953	Hon. JOHN BRACKEN.....	May 4, 1962
Hon. JOHN WHITNEY PICKERSGILL ²	June 12, 1953	Hon. PAUL MARTINEAU.....	Aug. 9, 1962

For footnotes, see end of table.

5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Apr. 30, 1963—concluded

Member ¹	Date When Sworn In	Member ¹	Date When Sworn In
Hon. RICHARD ALBERT BELL.....	Aug. 9, 1962	Hon. JOHN RICHARD GARLAND ²	Apr. 22, 1963
Hon. MALCOLM WALLACE MCCUTCHEON	Aug. 9, 1962	Hon. LUCIEN CARPIN ²	Apr. 22, 1963
Hon. MARK ROBERT DROUIN.....	Oct. 15, 1962	Hon. ALLAN JOSEPH MACEachern ²	Apr. 22, 1963
Hon. ROLAND MICHENER.....	Oct. 15, 1962	Hon. JEAN-PAUL DESCHATELETS ²	Apr. 22, 1963
Hon. MARCEL LAMBERT.....	Feb. 12, 1963	Hon. HÉDARD ROBICHAUD ²	Apr. 22, 1963
Hon. THÉOGÈNE RICARD.....	Mar. 18, 1963	Hon. J. WATSON MACNAUGHT ²	Apr. 22, 1963
Hon. FRANK CHARLES MCGEE.....	Mar. 18, 1963	Hon. ROGER TELLET ²	Apr. 22, 1963
Hon. MARTIAL ASSELIN.....	Mar. 18, 1963	Hon. JUDY LAMARSH ²	Apr. 22, 1963
Hon. WALTER LOCKHART GORDON ²	Apr. 22, 1963	Hon. CHARLES MILLS DRURY ²	Apr. 22, 1963
Hon. MITCHELL SHARP ²	Apr. 22, 1963	Hon. GUY FAVREAU ²	Apr. 22, 1963
Hon. AZELUS DENIS ²	Apr. 22, 1963	Hon. JOHN ROBERT NICHOLSON ²	Apr. 22, 1963
Hon. GEORGE JAMES MCLRAITH ²	Apr. 22, 1963	Hon. HARRY HAYS ²	Apr. 22, 1963
Hon. WILLIAM MOORE BENEDICKSON ²	Apr. 22, 1963	Hon. RENÉ TREMBLAY ²	Apr. 22, 1963
Hon. ARTHUR LAING ²	Apr. 22, 1963	Hon. ROBERT TASCHEREAU.....	Apr. 26, 1963
Hon. MAURICE LAMONTAGNE ²	Apr. 22, 1963		

¹ Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in. ² Ranks as a Member of the Cabinet. ³ Ranks as the Prime Minister of Canada.

6.—Duration and Sessions of Parliaments, 1945-63

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; and for the 18th and 19th Parliaments in the 1957-58 edition, p. 46.

Order of Parliament	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament ^{1,2}
20th Parliament.....	1st	Sept. 6, 1945	Dec. 18, 1945	104	76	June 11, 1945 ³ Aug. 9, 1945 ⁴ Apr. 30, 1949 ⁵ 3 y., 8 m., 22 d.
	2nd	Mar. 14, 1946	Aug. 31, 1946	171	118	
	3rd	Jan. 30, 1947	July 17, 1947	169	115	
	4th	Dec. 5, 1947	June 30, 1948	209	119	
	5th	Jan. 26, 1949	Apr. 30, 1949	95	59	
21st Parliament.....	1st	Sept. 15, 1949	Dec. 10, 1949	87	64	June 27, 1949 ³ Aug. 25, 1949 ⁴ June 13, 1953 ⁵ 3 y., 9 m., 20 d.
	2nd	Feb. 15, 1950	June 30, 1950	135	90	
	3rd	Aug. 29, 1950	Jan. 29, 1951	154	17	
	4th	Jan. 30, 1951	Oct. 9, 1951	253	105	
	5th	Oct. 9, 1951	Dec. 29, 1951	82	56	
	6th	Feb. 28, 1952	Nov. 20, 1952	267	87	
	7th	Nov. 20, 1952	May 14, 1953	176	108	
22nd Parliament.....	1st	Nov. 12, 1953	June 26, 1954	227	139	Aug. 10, 1953 ³ Oct. 8, 1953 ⁴ Apr. 12, 1957 ⁵ 3 y., 6 m., 5 d.
	2nd	Jan. 7, 1955	July 28, 1955	203	140	
	3rd	Jan. 10, 1956	Aug. 14, 1956	218	152	
	4th	Nov. 26, 1956	Jan. 8, 1957	44 ^c	5	
	5th	Jan. 8, 1957	Apr. 12, 1957	95	71	
23rd Parliament.....	1st	Oct. 14, 1957	Feb. 1, 1958	111	78	June 10, 1957 ³ Aug. 8, 1957 ⁴ Feb. 1, 1958 ⁵ 5 m., 25 d.
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 ³ Apr. 30, 1958 ⁴ Apr. 19, 1962 ⁵ 3 y., 11 m., 20 d.
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	Sept. 28, 1961	316 ^d	174	
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament.....	1st	Sept. 27, 1962	Feb. 5, 1963 ^e	132	72	June 18, 1962 ³ July 18, 1962 ⁴ Feb. 6, 1963 ⁵ 6 m., 20 d.
26th Parliament.....	1st	May 16, 1963	Apr. 8, 1963 ³ May 8, 1963 ⁴

¹ The ordinary legal limit of duration for each Parliament is five years. ² Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (B.N.A. Act, Sect. 50). ³ Date of general election. ⁴ Writs returnable. ⁵ Dissolution of Parliament. ⁶ Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957. ⁷ Includes long adjournment from July 13 to Sept. 7, 1961. ⁸ Government defeated in House of Commons on want of confidence motion.

Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of the Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice most public Bills originate in the House of Commons, although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Bills may be dealt with in the Senate while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVI for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1960, the legislative authority of the Parliament of Canada extends to the following matters: the amendment of the Constitution of Canada (subject to certain exceptions); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and inland fisheries; ferries between a province and any British or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal jurisdiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (Br. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada might make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions.

The Senate.—From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is traced in the 1940 Year Book, pp. 47-49, and is summarized by province in Table 7.

Senators are appointed for life by the Governor General by instrument under the Great Seal of Canada on the recommendation of the Prime Minister. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. In each of the four main divisions of Canada, except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

7.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915-1948	1949-1963
Ontario.....	24	24	24	24	24	24	24	24	24	24	24
Quebec.....	24	24	24	24	24	24	24	24	24	24	24
Atlantic Provinces.....	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia.....	12	12	12	10	10	10	10	10	10	10	10
New Brunswick.....	12	12	12	10	10	10	10	10	10	10	10
Prince Edward Island.....	...	...	...	4	4	4	4	4	4	4	4
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	6
Western Provinces.....	...	2	5	5	6	8	9	11	15	24	24
Manitoba.....	...	2	2	2	2	3	4	4	4	6	6
British Columbia.....	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan.....	...	...	...	...	...	...	...	...	...	6	6
Alberta.....	...	...	...	...	2	2	4	4	4	6	6
Totals.....	72	74	77	77	78	80	81	83	87	96	102

The Senate is not a competitor of the House of Commons in the field of legislation but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.

8.—Members of the Senate, by Province, as at Apr. 30, 1963¹

Speaker.....	HON. MAURICE BOURGET
Leader of the Government.....	HON. WILLIAM ROSS MACDONALD
Leader of the Opposition.....	HON. ALFRED J. BROOKS
Clerk of the Senate and Clerk of the Parliaments.....	JOHN FORBES MACNEILL

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
Newfoundland— (8 Senators)		Nova Scotia—concluded	
BAIRD, ALEXANDER BOYD.....	St. John's	MACDONALD, JOHN M.....	North Sydney
PRATT, ALBERT C.....	St. John's	O'LEARY, CLEMENT A.....	Antigonish
BASHA, MICHAEL G.....	Curling	WELCH, FRANK C.....	Wolfville
BRADLEY, FREDERICK GORDON.....	Bonavista	New Brunswick—	
HIGGINS, JOHN G.....	St. John's	(10 Senators)	
HOLLETT, MALCOLM.....	St. John's	VENIOT, CLARENCE JOSEPH.....	Bathurst
Prince Edward Island—		MCLEAN, ALEXANDER NEIL.....	Saint John
(4 Senators)		BURCHILL, GEORGE PERCIVAL.....	South Nelson
GRANT, THOMAS VINCENT.....	Montague	FERGUSON, MURIEL McQUEEN.....	Fredericton
INMAN, F. ELSIE.....	Montague	MCGRAND, FRED A.....	Fredericton Jot.
MACDONALD, JOHN J.....	Charlottetown	SAVOIE, CALIXTE F.....	Moncton
PHILLIPS, ORVILLE HOWARD.....	Alberton	TAYLOR, AUSTIN CLAUDE.....	Salisbury
Nova Scotia—		EMERSON, CLARENCE V.....	Saint John
(10 Senators)		BROOKS, ALFRED J.....	Sussex
ROBERTSON, WISHART McLEA.....	Truro	FOURNIER, EDGAR E.....	Iroquois
KINLEY, JOHN JAMES.....	Lunenburg	Quebec—	
COMEAU, JOSEPH WILLIE.....	Comeauville	(23 Senators—1 vacancy)	
ISNOR, GORDON B.....	Halifax	RAYMOND, DONAT.....	Montreal
SMITH, DONALD.....	Liverpool	HUGESSEN, ADRIAN KNATCHBULL.....	Montreal
CONNOLLY, HAROLD.....	Halifax	HOWARD, CHARLES BENJAMIN.....	Sherbrooke
BLOIS, FREDERICK M.....	Truro	GOUIN, LÉON MERCIER.....	Montreal
		VIGN, THOMAS.....	Outremont

¹For footnote, see end of table, p. 74.

8.—Members of the Senate, by Province, as at Apr. 30, 1963¹—concluded

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
Quebec—concluded		Ontario—concluded	
VAILLANCOURT, CYRILLE.....	Lévis	GROSART, ALLISTER.....	Ottawa
DUPUIS, VINCENT.....	Montreal	ROBERTSON, JOHN A.....	Kenora
DESSUREAULT, JEAN MARIE.....	Quebec	WALKER, DAVID J.....	Toronto
BOUFFARD, PAUL HENRI.....	Quebec	BELISLE, RHEAL.....	Sudbury
JODOIN, MARIANA BEAUCHAMP.....	Montreal		
TREMBLAY, LEONARD D. SWEZEY..	St. Malachie	Manitoba—	
FREMNIER, SARTO.....	Montreal	(6 Senators)	
MOLSON, H. DE M.....	Montreal	BEAUBIEN, ARTHUR LUCIEN.....	St. Jean Baptiste
POWER, C. G.....	Quebec	CRERAR, THOMAS ALEXANDER.....	Winnipeg
POULIOT, JEAN FRANÇOIS.....	Rivière du Loup	THORVALDSON, GUNNAR S.....	Winnipeg
LEFRANÇOIS, J. EUGÈNE.....	Montreal	IRVINE, OLIVE L.....	Winnipeg
DROUIN, MARK ROBERT.....	Quebec	YUZUK, PAUL.....	Winnipeg
MÉTHOT, LÉON.....	Trois Rivières	HAIG, J. CAMPBELL.....	Winnipeg
MONETTE, GUSTAVE.....	Montreal		
QUART, JOSIE A.....	Sillery	Saskatchewan—	
BAUBIEN, LOUIS.....	Montreal	(6 Senators)	
FLYNN, JACQUES.....	Quebec	HORNER, RALPH BYRON.....	Blaine Lake
BOURGET, MAURICE.....	Lévis	ASELTINE, WALTER MORLEY.....	Rosetown
		WOOD, THOMAS H.....	Regina
		BOUCHER, WILLIAM ALBERT.....	Prince Albert
		PEARSON, ARTHUR M.....	Lumsden
		HNATSYSHYN, JOHN.....	Saskatoon
Ontario—			
(23 Senators—1 vacancy)		Alberta—	
LAMBERT, NORMAN PLATT.....	Ottawa	(6 Senators)	
HAYDEN, SALTER ADRIAN.....	Toronto	BLAIS, ARISTIDE.....	Edmonton
PATERSON, NORMAN MCLEOD.....	Fort William	GERSHAW, FRED WILLIAM.....	Medicine Hat
DAVIES, WILLIAM RUPERT.....	Toronto	STAMBAUGH, J. WESLEY.....	Bruce
CAMPBELL, GORDON PETER.....	Toronto	CAMERON, DONALD.....	Edmonton
TAYLOR, WILLIAM HORACE.....	Brantford	GLADSTONE, JAMES.....	Cardston
BISHOP, CHARLES LAWRENCE.....	Ottawa	BUCHANAN, JOHN A.....	Edmonton
ROEBUCK, ARTHUR WENTWORTH.....	Toronto		
WOODROW, ALLAN L.....	Toronto	British Columbia—	
MACDONALD, WILLIAM ROSS.....	Brantford	(6 Senators)	
CONNOLLY, JOHN J.....	Ottawa	FARRIS, JOHN WALLACE DE BEQUE..	Vancouver
CRELL, DAVID A.....	Toronto	TURGEON, JAMES GRAY.....	Vancouver
LEONARD, T. D'ARCY.....	Toronto	McKEEN, STANLEY STEWART.....	Vancouver
WHITE, GEORGE STANLEY.....	Madoc	REID, THOMAS.....	New Westminster
SULLIVAN, JOSEPH A.....	Toronto	HODGES, NANCY.....	Victoria
CHOQUETTE, LIONEL.....	Ottawa	SMITH, SIDNEY JOHN.....	Kamloops
WILLIS, HARRY A.....	Toronto		
McCUTCHEON, M. WALLACE.....	Toronto		
O'LEARY, M. GRATTAN.....	Ottawa		

¹ Any changes occurring between Apr. 30, 1963 and the date of going to press will be carried in an Appendix to this volume.

The House of Commons.—The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be re-adjusted from time to time provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basis of the population of all the provinces taken as a whole. The Act was amended accordingly in 1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:—

The membership assigned to each province shall be computed by dividing the total population of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the General Election of 1949.

After the completion of the 1951 Census it was apparent that as a result of a wartime shift of population a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended to provide representation on the following basis:—

"Sect. 51.—(1) Subject as hereinafter provided, the number of members of the House of Commons shall be two hundred and sixty-three and the representation of the provinces therein shall forthwith upon the coming into force of this section and thereafter on the completion of each decennial census be readjusted by such authority, in such manner, and from such time as the Parliament of Canada from time to time provides, subject and according to the following rules:—

"1. There shall be assigned to each of the provinces a number of members computed by dividing the total population of the provinces by two hundred and sixty-one and by dividing the population of each province by the quotient so obtained, disregarding, except as hereinafter in this section provided, the remainder, if any, after the said process of division.

"2. If the total number of members assigned to all the provinces pursuant to rule one is less than two hundred and sixty-one, additional members shall be assigned to the provinces (one to a province) having remainders in the computation under rule one commencing with the province having the largest remainder and continuing with the other provinces in the order of the magnitude of their respective remainders until the total number of members assigned is two hundred and sixty-one.

"3. Notwithstanding anything in this section, if upon completion of a computation under rules one and two, the number of members to be assigned to a province is less than the number of senators representing the said province, rules one and two shall cease to apply in respect of the said province, and there shall be assigned to the said province a number of members equal to the said number of senators.

"4. In the event that rules one and two cease to apply in respect of a province then, for the purpose of computing the number of members to be assigned to the provinces in respect of which rules one and two continue to apply, the total population of the provinces shall be reduced by the number of the population of the province in respect of which rules one and two have ceased to apply and the number two hundred and sixty-one shall be reduced by the number of members assigned to such province pursuant to rule three.

"5. On any such readjustment the number of members for any province shall not be reduced by more than fifteen per cent below the representation to which such province was entitled under rules one to four of this subsection at the last preceding readjustment of the representation of that province, and there shall be no reduction in the representation of any province as a result of which that province would have a smaller number of members than any other province that according to the results of the then last decennial census did not have a larger population; but for the purposes of any subsequent readjustment of representation under this section any increase in the number of members of the House of Commons resulting from the application of this rule shall not be included in the divisor mentioned in rules one to four of this subsection.

"6. Such readjustment shall not take effect until the termination of the then existing Parliament.

"(2) The Yukon Territory as constituted by chapter forty-one of the Statutes of Canada, 1901, shall be entitled to one member, and such other part of Canada not comprised within a province as may from time to time be defined by the Parliament of Canada shall be entitled to one member." (RSC 1952, c. 304.)

The principal effect of these latest rules is that the representation of any province shall not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the rule shall not work out in such manner that the representation of a province with a smaller population shall be greater than any province with a larger population.

Subsequently, Parliament enacted a measure, "An Act to readjust the Representation in the House of Commons, 1952", effective in the General Election of 1953, which provided that representation in the House of Commons shall be on the following basis:—

"Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sixty-five members." (RSC 1952, c. 334.)

The number of representatives of each province elected at each of the 26 General Elections since Confederation is given in Table 9.

9.—Representation in the House of Commons, as at Federal General Elections 1867-1963

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963
Ontario.....	82	88	88	92	92	92	86	86	82	82	82	83	85
Quebec.....	65	65	65	65	65	65	65	65	65	65	65	73	75
Nova Scotia.....	19	21	21	21	21	20	18	18	16	14	12	13	12
New Brunswick.....	15	16	16	16	16	14	13	13	11	11	10	10	10
Manitoba.....	...	4	4	5	5	7	7	7	10	15	17	17	14
British Columbia.....	...	6	6	6	6	6	4	4	4	4	4	4	4
Prince Edward Island.....	...	...	6	6	6	5	4	4	10	16	21	20	17
Saskatchewan.....	...	...	...	...	4	4	7	7	12	16	17	17	17
Alberta.....	...	...	...	...	...	...	1	1	1	1	1	1	1
Yukon.....	...	...	...	...	...	...	1	1	1	1	1	1	1
Mackenzie River, N.W.T.	...	...	...	...	...	...	...	...	...	...	...	7	7
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	181	200	206	211	215	213	214	221	235	245	245	262	265

Under their parliamentary system of representation, based on a "constitution similar in principle to that of the United Kingdom", the people of Canada elect representatives having various political party affiliations. In a general election, the Canadian electorate not only determines what political party leader shall be called on to form the Government of the day, but it also decides which of the parties is to become the Official Opposition. Her Majesty's Loyal Opposition occupies an essential place in constitutions based on the British parliamentary system, in that its function is to oppose or criticize in debate the Government in power—an essential to good government at all times. The Official Opposition is founded, like such institutions as the Cabinet and the Prime Ministership, on unwritten custom that has become firmly established. Although the position of Leader of the Opposition is not recognized in the British North America Act, it received statutory acknowledgment in the Canadian Parliament in 1905 when the Senate and House of Commons Act (SC 1905, c. 43, Sect. 2) provided an additional sessional allowance to "the member occupying the recognized position of Leader of the Opposition in the House of Commons".

The final list of Members of the House of Commons as elected at the Twenty-Sixth General Election of Apr. 8, 1963, was not available at the time of the printing of this Chapter and will be placed in an Appendix to this volume.

Indemnities and Allowances.—Members of the Senate receive a sessional allowance at the rate of \$8,000 per annum. In addition they receive at the end of each calendar year an annual expense allowance of \$2,000 which is subject to income tax. The member of the Senate occupying the recognized position of Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$10,000, and to the member of the Senate occupying the recognized position of Leader of the Opposition in the Senate there is paid, in addition to his sessional allowance, an annual allowance

of \$6,000; but if the Leader of the Government is in receipt of a salary under the Salaries Act, the annual allowance is not paid. Members of the House of Commons are paid a sessional allowance at the rate of \$8,000 per annum. In addition they receive \$2,000 as an expense allowance paid at the end of each calendar year. This allowance, except that for Ministers of the Crown and for the Leader of the Opposition in the House of Commons, is not subject to income tax. The remuneration of the Prime Minister is \$25,000 a year and of a Cabinet Minister and the Leader of the Opposition \$15,000 a year in addition to the sessional allowance and expense allowance each receives as a Member of Parliament. A Cabinet Minister is also entitled to a motor car allowance of \$2,000. The remuneration of a Minister without Portfolio is \$7,500 a year in addition to the sessional allowance and expense allowance, the latter taxable. The Speaker of the Senate and the Speaker of the House of Commons each receives, besides the sessional allowance and expense allowance, a salary of \$9,000 and a motor car allowance of \$1,000 and each is entitled to \$3,000 in lieu of a residence. The Deputy Speaker of the House of Commons receives a salary of \$6,000 and an allowance of \$1,500 in lieu of a residence. The Deputy Chairman of Committees receives an annual allowance of \$2,000. Parliamentary Secretaries to the Ministers of the Crown receive \$8,000 sessional allowance as Members of Parliament, \$4,000 a year as Parliamentary Secretaries and the \$2,000 expense allowance paid to all Members of Parliament.

The Federal Franchise.—The present federal franchise laws are contained in the Canada Elections Act (SC 1960, c. 39). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years, are ordinarily resident in the electoral district on the date of the issue of the writ ordering an election and, in the case of British subjects other than Canadian citizens, have been ordinarily resident in Canada for twelve months prior to polling day at such election. Persons denied the right to vote are:—

- (1) the Chief Electoral Officer and the Assistant Chief Electoral Officer;
- (2) judges appointed by the Governor General in Council;
- (3) the returning officer for each electoral district;
- (4) persons undergoing punishment as inmates of any penal institution for the commission of any offence;
- (5) persons restrained of their liberty or deprived of the management of their property by reason of mental disease; and
- (6) persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property". Legislation proclaimed on the above-mentioned date confers upon all Indians who have attained the age of 21 years the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act.

The Canadian Forces Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

Subsection 3.—The Judiciary

The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act to provide from time to time for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

Supreme Court of Canada.—This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of \$10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

10.—Chief Justice and Judges of the Supreme Court of Canada, as at Apr. 30, 1963

(In order of seniority)

Name	Date of Appointment
Hon. Chief Justice ROBERT TASCHEREAU.....	Apr. 23, 1963 ¹
Hon. Justice JOHN R. CARTWRIGHT.....	Dec. 23, 1949
Hon. Justice J. H. GERALD FAUTEUX.....	Dec. 23, 1949
Hon. Justice DOUGLAS CHARLES ABBOTT.....	July 1, 1954
Hon. Justice RONALD MARTLAND.....	Jan. 15, 1958
Hon. Justice WILFRED JUDSON.....	Feb. 5, 1958
Hon. Justice ROLAND A. RITCHIE.....	May 5, 1959
Hon. Justice EMMETT M. HALL.....	Nov. 23, 1962
One vacancy as at Apr. 30, 1963.	

¹ First appointed as a Judge of the Supreme Court, Feb. 9, 1940.

Exchequer Court of Canada.—The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and six puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds \$500; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed \$500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by

the Admiralty Act (RSC 1952, c. 1). Under this statute, the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.—*Railway Act.*—The Railway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada. This Court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.—By virtue of Sect. 91(21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.—By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

Provincial and Territorial Judiciaries*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92 (14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159 and amendments). Under Sect. 99, the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the judges of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec, there are county or district courts of each province with limited jurisdiction varying from \$500 to \$2,500 in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or

* More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are ex officio judges of the Territorial Court of the Northwest Territories and vice versa. In 1960 the two Acts were amended to provide for a Court of Appeal in each of the Territories. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

Section 2.—Provincial and Territorial Governments*

In each of the provinces, the Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on p. 68 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly, except for the Province of Quebec where there is a Legislative Council as well as a Legislative Assembly.

The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (Br. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, though wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment for enforcing any law of the province relating to any of the aforesaid subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion in the federation.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

Provincial Franchise.—Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person, male or female, at the age of 21 years who is a Canadian citizen or other British subject,

* The information given in Subsections 1 to 10 of this Section is brought up to Apr. 30, 1963. Any important changes occurring between that date and the time of going to press will be found in an Appendix to this volume.

who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. These qualifications apply with modifications to voters in most provinces. The principal exceptions give voting privileges to persons in Quebec and Saskatchewan at the age of 18 and in Alberta and British Columbia at 19 years.

Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly has 42 members elected for a term of five years. The Legislature elected Nov. 19, 1962 is the 33rd in the history of Newfoundland and the 5th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had four Lieutenant-Governors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col Sir Leonard Outerbridge commissioned Sept. 5, 1949; the Hon. Campbell Macpherson commissioned Dec. 16, 1957; and the Hon. Fabian O'Dea commissioned Mar. 1, 1963. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Apr. 30, 1963.

The Premier receives a salary of \$10,000 and the other Cabinet Ministers \$9,000 per annum, plus a sessional indemnity of \$3,333.33 and a travelling and expense allowance of \$2,166.66. Each member of the House of Assembly receives a sessional indemnity of \$3,333.33 plus a travelling and expense allowance of \$1,666.66. An additional allowance of \$3,000 is made to the Leader of the Opposition.

11.—First Ministry of Newfoundland, as at Apr. 30, 1963

(Party standing at latest General Election, Nov. 19, 1962: 34 Liberal, 7 Progressive Conservative and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Minister of Economic Development.....	Hon. J. R. SMALLWOOD.....	Apr. 1, 1949	Apr. 1, 1949
Attorney General.....	Hon. L. R. CURTIS.....	Apr. 1, 1949	Apr. 1, 1949
Minister of Mines, Agriculture and Resources	Hon. W. J. KEOUGH.....	July 29, 1949	May 1, 1957
Minister of Labour.....	Hon. C. H. BALLAM.....	Apr. 4, 1950	Apr. 4, 1950
Minister of Finance.....	Hon. E. S. SPENCER.....	July 29, 1949	May 1, 1957
Minister of Public Works.....	Hon. J. R. CHALKER.....	Apr. 4, 1950	May 1, 1957
Minister of Highways.....	Hon. F. W. ROWE.....	May 21, 1952	May 11, 1959
Minister without Portfolio.....	Hon. P. J. LEWIS.....	Dec. 15, 1951	Dec. 15, 1951
Minister of Public Welfare and Solicitor General.....	Hon. MYLES P. MURRAY.....	Dec. 15, 1951	{Feb. 15, 1963 {Apr. 10, 1955
Minister of Provincial Affairs.....	Hon. J. T. CHEESEMAN.....	May 1, 1957	Feb. 15, 1963
Minister of Health.....	Hon. J. M. McGRATH.....	July 5, 1956	Aug. 7, 1956
Minister of Municipal Affairs and Supply....	Hon. B. J. ABBOTT.....	May 1, 1957	May 1, 1957
Minister of Education.....	Hon. G. A. FRECKER.....	Aug. 26, 1959	Aug. 26, 1959
Minister of Fisheries.....	Hon. C. M. LANE.....	June 12, 1961	Feb. 15, 1963

Subsection 2.—Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. F. W. Hyndman, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Mar. 31, 1958. Lieutenant-Governors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105.

The General Assembly elected Dec. 10, 1962 is the 50th in the history of Prince Edward Island Legislatures and the 25th since Confederation. It has 30 members from 15 electoral districts who serve for a statutory term of five years. One half of the members of the Legislative Assembly are elected on a property vote. Each district elects one

Councillor (elected on a property vote) and one Assembly member (elected on a general franchise vote). Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 105.

The annual salary of the Premier is \$8,000 and that of a Cabinet Minister \$5,000. Each member of the Assembly is paid \$2,000 for each session attended by him and an additional \$1,000 tax free as indemnity for expenses and travelling. The Speaker is paid an additional \$666.60 and a further additional \$333.40 tax free as indemnity for expenses and travelling. The Leader of the Opposition is paid an additional \$1,000 and a further additional \$500 tax free for expenses and travelling.

12.—Legislatures of Prince Edward Island, 1935-62, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75, and for 1924-35 in the 1938 edition, p. 110.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 23, 1935	18th.....	5	Sept. 25, 1935	Apr. 21, 1939
May 18, 1939	19th.....	4	Mar. 20, 1940	Aug. 20, 1943
Sept. 15, 1943	20th.....	4	Feb. 15, 1944	Oct. 27, 1947
Dec. 11, 1947	21st.....	5	Feb. 24, 1948	Mar. 30, 1951
Apr. 26, 1951	22nd.....	5	Oct. 23, 1951	Apr. 27, 1955
May 25, 1955	23rd.....	4	Feb. 2, 1956	Aug. 3, 1959
Sept. 1, 1959	24th.....	4	Mar. 1, 1960	Nov. 8, 1962
Dec. 10, 1962	25th.....	1	Mar. 14, 1963	1

¹ Life of Legislature not expired at Apr. 30, 1963.

13.—Twenty-Fourth Ministry of Prince Edward Island, as at Apr. 30, 1963

(Party standing at latest General Election, Dec. 10, 1962: 19 Progressive Conservative and 11 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of the Executive Council.....	HON. WALTER R. SHAW.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Public Works and Minister of Highways.....	HON. J. PHILIP MATHESON.....	Sept. 16, 1959	Jan. 3, 1963
Minister of Education.....	HON. L. GEORGE DEWAR.....	Sept. 16, 1959	Jan. 3, 1963
Minister of Industry and Natural Resources and Minister of Fisheries.....	HON. LEO F. ROSSITER.....	Sept. 16, 1959	Jan. 3, 1963
Minister of Health.....	HON. HUBERT B. McNEILL.....	Sept. 16, 1959	Jan. 3, 1963
Provincial Treasurer, Attorney and Advocate General.....	HON. M. ALBAN FARMER.....	Jan. 3, 1963	Jan. 3, 1963
Provincial Secretary, Minister of Tourist Development and Minister of Municipal Affairs.....	HON. J. DAVID STEWART.....	Sept. 16, 1959	Jan. 3, 1963
Minister of Welfare and Labour.....	HON. HENRY W. WEDGE.....	Sept. 16, 1959	Jan. 3, 1963
Minister of Agriculture.....	HON. ANDREW B. MACRAE.....	Sept. 16, 1960	Jan. 3, 1963

Subsection 3.—Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. H. P. MacKeen, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Mar. 1, 1963. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 106.

The Legislature has 43 members elected for a maximum term of five years. The Legislature elected June 7, 1960 is the 47th in Nova Scotia's history and the 24th since Confederation. Premiers since Confederation are listed in the 1960 Year Book, p. 107.

The Premier of the province receives a salary of \$12,000 per annum and each Cabinet Minister a salary of \$10,000 per annum. Each member of the House of Assembly receives

a sessional indemnity of \$3,200 and an allowance of \$1,600 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of \$6,000 in addition to his sessional indemnity.

14.—Legislatures of Nova Scotia, 1933-61, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76, and for 1924-33 in the 1938 edition, p. 111.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1933	17th.....	4	Mar. 1, 1934	May 20, 1937
June 29, 1937	18th.....	4	Mar. 1, 1938	Sept. 19, 1941
Oct. 28, 1941	19th.....	4	Feb. 19, 1942	Sept. 12, 1945
Oct. 23, 1945	20th.....	4	Mar. 14, 1946	Apr. 27, 1949
June 9, 1949	21st.....	4	Mar. 21, 1950	Apr. 14, 1953
May 26, 1953	22nd.....	3	Feb. 24, 1954	Sept. 20, 1956
Oct. 30, 1956	23rd.....	3	Feb. 27, 1957	Apr. 26, 1960
June 7, 1960	24th.....	1	Feb. 8, 1961	1

¹ Life of Legislature not expired at Apr. 30, 1963.

15.—Seventeenth Ministry of Nova Scotia, as at Apr. 30, 1963

(Party standing at latest General Election, June 7, 1960: 27 Progressive Conservative, 15 Liberal and 1 Co-operative Commonwealth Federation.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Minister of Education.....	HON. R. L. STANFIELD.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Finance and Economics and Chairman of the Nova Scotia Power Commission.....	HON. G. I. SMITH.....	Nov. 20, 1956	{May 2, 1962 Nov. 20, 1956
Attorney General and Minister of Public Health.....	HON. R. A. DONAHOE.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Public Works and Minister of Highways.....	HON. S. T. PYKE.....	Nov. 20, 1956	{Nov. 20, 1956 May 2, 1962
Minister of Agriculture and Marketing and Minister of Lands and Forests.....	HON. E. D. HALIBURTON.....	Nov. 20, 1956	{Nov. 20, 1956 July 27, 1959
Minister of Trade and Industry.....	HON. E. A. MANSON.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Municipal Affairs and Minister of Labour.....	HON. N. L. FERGUSON.....	Nov. 20, 1956	{July 27, 1959 May 2, 1962
Provincial Secretary, Minister of Public Welfare and Minister in charge of Emergency Measures Organization.....	HON. W. S. KENNEDY JONES.....	Apr. 21, 1960	{Oct. 20, 1960 Oct. 20, 1960 May 2, 1962
Minister of Mines and Minister in charge of the Liquor Control Act.....	HON. DONALD M. SMITH.....	Oct. 13, 1960	{Dec. 12, 1961 Oct. 13, 1960
Minister without Portfolio.....	HON. GEORGE A. BURRIDGE.....	Oct. 13, 1960	Oct. 13, 1960

Subsection 4.—New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. J. Leonard O'Brien, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office June 6, 1958. Lieutenant-Governors since Confederation (1867) are cited in the 1960 Year Book, p. 108.

The Legislature elected Apr. 22, 1963 is the 45th in New Brunswick's history and the 18th since Confederation. It has 52 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108.

The Premier receives \$7,500 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is \$10,000 and the amount paid as indemnity to each member of the House of Assembly is \$3,400 plus an additional \$1,700 allowance for expenses. The Leader of the Opposition receives an additional \$6,000 and the Speaker receives an allowance of \$4,000 in addition to the regular indemnity.

16.—Legislatures of New Brunswick, 1935-63, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77, and for 1924-35 in the 1938 edition, p. 112.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 27, 1935	11th.....	4	Mar. 5, 1936	Oct. 26, 1939
Nov. 20, 1939	12th.....	5	Apr. 4, 1940	July 10, 1944
Aug. 28, 1944	13th.....	4	Feb. 20, 1945	May 18, 1948
June 28, 1948	14th.....	4	Mar. 8, 1949	July 16, 1952
Sept. 22, 1952	15th.....	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	16th.....	4	Feb. 21, 1957	May 19, 1960
June 27, 1960	17th.....	3	Nov. 17, 1960	Mar. 12, 1963
Apr. 22, 1963	18th.....	1		1

Legislature not yet in session at Apr. 30, 1963.

17.—Twenty-Third Ministry of New Brunswick, as at Apr. 30, 1963

(Party standing at latest General Election, Apr. 22, 1963: 31 Liberal and 21 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Attorney General.....	Hon. LOUIS J. ROBICHAUD.....	July 12, 1960	July 12, 1960
Minister of Finance.....	Hon. L. G. DESBRISAY.....	July 12, 1960	July 12, 1960
Minister of Lands and Mines.....	Hon. H. G. CROCKER.....	July 12, 1960	July 12, 1960
Minister of Education.....	Hon. HENRY G. IRWIN.....	July 12, 1960	July 12, 1960
Minister of Public Works.....	Hon. ANDREW F. RICHARD.....	July 12, 1960	July 12, 1960
Minister of Agriculture.....	Hon. J. ADRIEN LEVESQUE.....	July 12, 1960	July 12, 1960
Minister of Health and Social Services.....	Hon. GEORGE L. DUMONT.....	July 12, 1960	July 12, 1960
Minister of Labour.....	Hon. KENNETH J. WEBBER.....	July 12, 1960	July 12, 1960
Minister of Municipal Affairs.....	Hon. JOSEPH E. LEBLANC.....	July 12, 1960	July 12, 1960
Chairman, New Brunswick Electric Power Commission.....	Hon. DONALD HARPER.....	July 12, 1960	July 12, 1960
Minister of Youth and Welfare.....	Hon. WILLIAM R. DUFFIE.....	July 12, 1960	Nov. 30, 1960
Minister of Industry and Development.....	Hon. MICHEL FOURNIER.....	July 12, 1960	July 12, 1960

Subsection 5.—Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a bicameral legislature—the Legislative Council and the Legislative Assembly. The Hon. Paul Comtois, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Oct. 6, 1961. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109.

The Legislative Council has 24 members nominated for life by the Lieutenant-Governor in Council. The Legislative Assembly has 95 elected members and, like the Legislative Council, has the power to bring forward Bills relating to civil and administrative matters and to the amendment or repeal of existing laws. A Bill to be approved by the Lieutenant-Governor must have received the assent of both Houses. Only the Legislative Assembly can bring forward a Bill requiring the expenditure of public money. The maximum life of a Legislature is five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 110.

Each member of the Legislative Council and the Legislative Assembly receives a sessional indemnity of \$6,700, plus an expense allowance of \$3,300. In addition to this sessional indemnity and allowance, the Premier receives an annual indemnity of \$12,000, an expense allowance of \$4,000 and a lodging allowance of \$2,000; Ministers with Portfolio each receive an annual indemnity of \$10,000 plus a \$5,000 expense allowance; Ministers without Portfolio each receive an indemnity of \$5,000 plus a \$2,000 expense allowance; the Speaker of the Legislative Assembly receives an indemnity of \$8,000, an expense allowance of \$1,000 and a lodging allowance of \$1,000 and the Deputy Speaker receives an indemnity of \$5,000 and an expense allowance of \$1,000; the Leader of the Opposition in the Assembly receives an indemnity of \$8,000, an expense allowance of \$2,000 and a lodging allowance of \$2,000; the Leader of the Government and the Leader of the Opposition in the Legislative Council each receive an additional sessional indemnity of \$2,000 plus a \$3,000 expense allowance.

18.—Legislatures of Quebec, 1935-63, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78, and for 1924-35 in the 1938 edition, p. 113.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Nov. 25, 1935	19th.....	1	Mar. 24, 1936	June 11, 1936
Aug. 17, 1936	20th.....	4	Oct. 7, 1936	Sept. 23, 1939
Oct. 25, 1939	21st.....	5	Feb. 20, 1940	June 29, 1944
Aug. 8, 1944	22nd.....	4	Feb. 7, 1945	June 9, 1948
July 28, 1948	23rd.....	4	Jan. 19, 1949	May 28, 1952
July 16, 1952	24th.....	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th.....	4	Nov. 14, 1956	Apr. 27, 1960
June 22, 1960	26th.....	3	Sept. 20, 1960	Sept. 19, 1962
Nov. 15, 1962	27th.....	1	Jan. 15, 1963	1

¹ Life of Legislature not expired at Apr. 30, 1963.

19.—Twenty-Third Ministry of Quebec, as at Apr. 30, 1963

(Party standing at latest General Election, Nov. 15, 1962: 63 Liberal, 31 Union Nationale and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, Minister of Finance and Minister of Federal-Provincial Affairs.....	Hon. JEAN LESAGE.....	July 6, 1960	Apr. 1, 1961
Attorney General and Minister of Cultural Affairs.....	Hon. GEORGES LAPALME.....	July 6, 1960	Apr. 1, 1961
Minister of Labour.....	Hon. RENÉ HAMÉL.....	July 6, 1960	July 6, 1960
Minister of Youth.....	Hon. PAUL GÉRIN-LAJOEIE.....	July 6, 1960	July 6, 1960
Minister of Agriculture and Colonization.....	Hon. ALcide COURCY.....	July 6, 1960	July 6, 1960
Minister of Natural Resources.....	Hon. RENÉ LÉVESQUE.....	July 6, 1960	Apr. 1, 1961
Minister of Provincial Revenue.....	Hon. PAUL EARL.....	July 6, 1960	Apr. 1, 1961
Minister of Transportation and Communications.....	Hon. GÉRARD COURNOYER.....	July 6, 1960	July 6, 1960
Minister of Roads.....	Hon. BERNARD PINARD.....	July 6, 1960	July 6, 1960
Minister of Family and Social Welfare.....	Hon. ÉMILien LAFRANCE.....	July 6, 1960	July 6, 1960
Provincial Secretary.....	Hon. BONA ARSENAULT.....	July 6, 1960	Apr. 3, 1963
Minister of Health.....	Hon. ALphonse COUTURIER.....	July 6, 1960	July 6, 1960
Minister of Tourism, Game and Fish.....	Hon. GÉrARD D. LÉVESQUE.....	July 6, 1960	Apr. 3, 1963
Minister of Industry and Commerce.....	Hon. LUCIEN CLICHE.....	July 6, 1960	Dec. 5, 1962
Minister of Lands and Forests.....	Hon. RENÉ SAINT-PIERRE.....	Dec. 20, 1961	Dec. 5, 1962
Minister of Public Works.....	Hon. PIERRE LAPORTE.....	Mar. 28, 1961	Mar. 28, 1961
Minister of Municipal Affairs.....	Hon. GEORGE C. MARLER.....	Dec. 5, 1962	Dec. 5, 1962
Minister without Portfolio.....	Hon. CLAIRe KIRKLAND-CASGRAIN.....	Oct. 8, 1960	Oct. 8, 1960
Minister without Portfolio.....	Hon. CARRIER FORTIN.....	Dec. 5, 1962	Dec. 5, 1962

20.—Members of the Legislative Council of Quebec, as at Apr. 30, 1963

(According to seniority)

Name	Division	Date of Appointment
R. O. GROTHÉ.....	De Salaberry.....	Dec. 23, 1927
HECTOR LAFERTÉ (Speaker).....	Stadacona.....	July 23, 1934
J. L. BARIBEAU.....	Shawinigan.....	Jan. 14, 1938
PHILIPPE BRAIS.....	Grandville.....	Feb. 16, 1940
JULES BRILLANT.....	Golfe.....	Jan. 14, 1942
FRANK L. CONNORS.....	Mille Isles.....	Jan. 14, 1942
FÉLIX MESSIER.....	De Lanaudière.....	Feb. 12, 1942
ÉDOUARD ASSELIN.....	Wellington.....	Jan. 23, 1946
GEO. B. FOSTER.....	Victoria.....	Aug. 22, 1946
GÉRALD MARTINEAU.....	Launzon.....	Aug. 22, 1946
J. OLIER RENAUD.....	Alma.....	Aug. 22, 1946
PATRICE TARDIF.....	De la Vallière.....	July 20, 1952
JOSEPH BOULANGER.....	De la Durantaye.....	Oct. 8, 1952
ÉDOUARD MASSON.....	Repentigny.....	Mar. 12, 1953
ALBERT BOUCHARD.....	La Salle.....	Nov. 24, 1954
JEAN BARRETTE.....	Sorel.....	Oct. 19, 1955
ÉMILE LESAGE.....	Montarville.....	Aug. 1, 1956
ALBINY PAQUETTE.....	Rougemont.....	Oct. 29, 1958
JOHN P. ROWAT.....	De Lorimier.....	Oct. 29, 1958
ERNEST BENOIT.....	Kennebec.....	Apr. 8, 1959
ANTONIO AUGER.....	Les Laurentides.....	Sept. 30, 1959
OSCAR GILBERT.....	Bedford.....	Mar. 30, 1960
JEAN RAYMOND.....	Rigaud.....	Apr. 27, 1960
GEORGE C. MARLER (Leader).....	Inkerman.....	Oct. 8, 1960

Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Hon. William Earl Rowe, Lieutenant-Governor at Apr. 30, 1963, was appointed effective Mar. 1, 1963. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112.

The House of Assembly, the single-chamber Legislature of the province, is composed of 98 members elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 112.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1960, c. 208) each member of the Assembly is paid an annual indemnity of \$5,000 and an allowance of \$2,000 for expenses. In addition, the Speaker receives a special indemnity at the annual rate of \$3,000 and an expense allowance of \$2,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of \$2,000; and the Leader of the Opposition a salary of \$12,000 per annum. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is \$16,000 and for a Cabinet Minister having charge of a department \$12,000. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receive a representation allowance of \$2,000 per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives \$2,500 salary and \$1,000 representation allowance per annum, by the Executive Council Act and the Legislative Assembly Act, respectively (RSO 1960).

21.—Legislatures of Ontario, 1934-60, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79, and for 1924-34 in the 1938 edition, p. 114.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	19th.....	3	Feb. 20, 1935	Apr. 9, 1936
Oct. 6, 1937	20th.....	8	Dec. 1, 1937	June 30, 1943
Aug. 4, 1943	21st.....	2	Feb. 22, 1944	Mar. 24, 1945
June 4, 1945	22nd.....	4	July 16, 1945	Apr. 27, 1948
June 7, 1948	23rd.....	4	Feb. 10, 1949	Oct. 6, 1951
Nov. 22, 1951	24th.....	5	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th.....	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th.....	1	Jan. 26, 1960	1

¹ Life of Legislature not expired at Apr. 30, 1963.

22.—Seventeenth Ministry of Ontario, as at Apr. 30, 1963

(Party standing at latest General Election, June 11, 1959: 71 Progressive Conservative, 22 Liberal and 5 Co-operative Commonwealth Federation.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of the Council.....	Hon. JOHN P. ROBERTS.....	Dec. 22, 1958	Nov. 8, 1961
Minister of Lands and Forests.....	Hon. A. KESLO ROBERTS.....	Aug. 17, 1955	Oct. 25, 1962
Minister of Public Welfare.....	Hon. LOUIS P. CECILE.....	Sept. 17, 1948	Aug. 17, 1955
Treasurer.....	Hon. JAMES N. ALLAN.....	Jan. 5, 1955	Apr. 28, 1958
Minister of Travel and Publicity.....	Hon. BRYAN L. CATHCART.....	Aug. 17, 1955	Aug. 17, 1955
Minister of Public Works.....	Hon. T. RAY CONNELL.....	Nov. 1, 1956	Dec. 22, 1958
Minister of Health.....	Hon. MATTHEW B. DYMOND.....	July 18, 1957	Dec. 22, 1958
Minister of Municipal Affairs.....	Hon. J. WILFRID SPOONER.....	July 18, 1957	Oct. 25, 1962
Attorney General and Minister in charge of the Department of Insurance.....	Hon. FREDERICK M. CASS.....	Apr. 28, 1958	Oct. 25, 1962
Provincial Secretary and Minister of Citizenship.....	Hon. JOHN YAREMKO.....	Apr. 28, 1958	May 26, 1960
Minister of Energy Resources and Minister of Economics and Development.....	Hon. ROBERT W. MACAULAY.....	May 26, 1958	May 5, 1959 Jan. 15, 1962
Minister of Mines.....	Hon. GEORGE C. WARDROPE.....	Dec. 22, 1958	Nov. 8, 1961
Minister of Labour.....	Hon. H. LESLIE ROWNTREE.....	Nov. 21, 1960	Oct. 25, 1962
Minister without Portfolio.....	Hon. ALLAN GROSSMAN.....	Nov. 21, 1960	Nov. 21, 1960
Minister of Agriculture.....	Hon. WILLIAM A. STEWART.....	Nov. 21, 1960	Nov. 8, 1961
Minister of Highways.....	Hon. CHARLES S. MACNAUGHTON.....	Nov. 8, 1961	Oct. 25, 1962
Minister of Reform Institutions.....	Hon. IRWIN HASKETT.....	Nov. 8, 1961	Nov. 8, 1961
Minister of Transport.....	Hon. JAMES A. C. AULD.....	Oct. 25, 1962	Oct. 25, 1962
Minister of Education.....	Hon. WILLIAM G. DAVIS.....	Oct. 25, 1962	Oct. 25, 1962
Minister without Portfolio.....	Hon. JOHN R. SIMONETT.....	Oct. 25, 1962	Oct. 25, 1962

Subsection 7.—Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of 11 members and a Legislative Assembly of 57 members elected for a statutory term of five years. The Hon. Errick F. Willis, Lieutenant-Governor at Apr. 30, 1963, was sworn in on Jan. 15, 1960. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113. Premiers since Confederation are listed in the 1960 Year Book, p. 114.

The Premier of the province is paid a salary of \$12,000 per annum and each of the other members of the Cabinet \$10,000. Members of the Legislature are each paid a sessional indemnity of \$2,667 and an expense allowance of \$1,333. The Leader of the Opposition is paid an additional amount of \$3,500 and the Speaker of the Legislature receives an amount double the indemnity and expense allowance of an individual member.

23.—Legislatures of Manitoba, 1936-62, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80, and for 1924-36 in the 1938 edition, p. 115.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 27, 1936	20th.....	5	Feb. 18, 1937	Mar. 13, 1941
Apr. 22, 1941	21st.....	5	Dec. 9, 1941	Sept. 8, 1945
Oct. 15, 1945	22nd.....	4	Feb. 19, 1946	Sept. 29, 1949
Nov. 10, 1949	23rd.....	7	Feb. 14, 1950	Apr. 23, 1953
June 8, 1953	24th.....	5	Feb. 2, 1954	Apr. 30, 1958
June 16, 1958	25th.....	2	Oct. 23, 1958	Mar. 31, 1959
May 14, 1959	26th.....	5	June 9, 1959	Nov. 9, 1962
Dec. 14, 1962	27th.....	1	Feb. 28, 1963	1

¹ Life of Legislature not expired at Apr. 30, 1963.

24.—Fifteenth Ministry of Manitoba, as at Apr. 30, 1963

(Party standing at latest General Election, Dec. 14, 1962: 35 Progressive Conservative, 13 Liberal, 8 New Democratic Party and 1 Social Credit.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Acting Provincial Treasurer....	HON. DUFF ROBLIN.....	June 30, 1958	June 30, 1958
Provincial Secretary and Minister of Industry and Commerce.....	HON. EDWARD GURNEY V. EVANS	June 30, 1958	{ Dec. 17, 1959 Aug. 7, 1959
Minister of Education.....	HON. STEWART E. MCLEAN.....	June 30, 1958	June 30, 1958
Attorney-General and Minister of Public Utilities.....	HON. STERLING R. LYON.....	June 30, 1958	{ June 30, 1958 Oct. 31, 1961
Minister of Health.....	HON. GEORGE JOHNSON.....	June 30, 1958	June 30, 1958
Minister of Welfare.....	HON. J. B. CARROLL.....	June 30, 1958	Feb. 27, 1963
Minister of Mines and Natural Resources...	HON. C. H. WITNEY.....	Aug. 7, 1959	Aug. 7, 1959
Minister of Agriculture and Conservation...	HON. GEORGE HUTTON.....	Aug. 7, 1959	Aug. 7, 1959
Minister of Public Works.....	HON. WALTER WEIR.....	Oct. 31, 1961	Nov. 5, 1962
Minister of Labour.....	HON. ORIE BAILEY.....	Feb. 27, 1963	Feb. 27, 1963
Minister of Municipal Affairs.....	HON. R. G. SMELLIE.....	Feb. 27, 1963	Feb. 27, 1963
Minister without Portfolio.....	HON. A. W. HARRISON.....	Feb. 27, 1963	Feb. 27, 1963

Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Hon. Robert L. Hanbidge, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Mar. 1, 1963. Lieutenant-Governors from Confederation (1905) to 1959 are cited in the 1960 Year Book, p. 115.

The statutory number of members of the Legislative Assembly is 55, elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 115.

The Premier receives \$13,000 and each Cabinet Minister \$10,000 annually in addition to a sessional indemnity. The Leader of the Opposition receives \$10,000 plus an office allowance of \$12,000 per annum, the Speaker \$3,000 and the Deputy Speaker \$2,000. The sessional indemnity of a member of the Legislature is \$4,000 together with an expense allowance of \$2,000. Each of the members for the three northernmost constituencies of Cumberland, Athabasca and Meadow Lake receives a \$4,335 sessional indemnity and a \$2,165 expense allowance.

25.—Legislatures of Saskatchewan, 1934-60, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81, and for 1924-34 in the 1938 edition, p. 116.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	8th.....	4	Nov. 15, 1934	May 14, 1938
June 8, 1938	9th.....	6	Jan. 19, 1939	May 10, 1944
June 15, 1944	10th.....	5	Oct. 19, 1944	May 19, 1948
June 24, 1948	11th.....	5	Feb. 10, 1949	May 7, 1952
June 11, 1952	12th.....	4	Feb. 12, 1953	Apr. 25, 1956
June 20, 1956	13th.....	4	Feb. 14, 1957	May 4, 1960
June 8, 1960	14th.....	1	Oct. 11, 1960	1

¹ Life of Legislature not expired at Apr. 30, 1963.

26.—Ninth Ministry of Saskatchewan, as at Apr. 30, 1963

(Party standing at latest General Election, June 8, 1960: 38 Co-operative Commonwealth Federation and 17 Liberal.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of the Executive Council.....	Hon. W. S. LLOYD.....	July 10, 1944	Nov. 7, 1961
Provincial Treasurer.....	Hon. J. H. BROCKELBANK.....	July 10, 1944	Sept. 7, 1962
Minister of Public Health.....	Hon. A. E. BLAKENEY.....	Aug. 1, 1960	Sept. 7, 1962
Minister of Labour and Minister of Telephones	Hon. C. C. WILLIAMS.....	July 10, 1944	(Nov. 13, 1944 July 27, 1956
Minister of Agriculture.....	Hon. I. C. NOLET.....	Jan. 8, 1946	Jan. 8, 1946
Minister of Mineral Resources.....	Hon. A. G. KUZIAK.....	Oct. 24, 1952	Nov. 19, 1962
Attorney General and Provincial Secretary...	Hon. R. A. WALKER.....	July 27, 1956	July 27, 1956 (Aug. 30, 1957
Minister of Industry and Information.....	Hon. R. BROWN.....	July 27, 1956	Apr. 1, 1960
Minister of Highways and Transportation...	Hon. C. G. WILLIS.....	Aug. 31, 1956	Aug. 1, 1960
Minister of Social Welfare and Rehabilitation.	Hon. A. M. NICHOLSON.....	July 11, 1960	July 11, 1960
Minister of Education.....	Hon. O. A. TURNBULL.....	July 11, 1960	Nov. 7, 1961
Minister of Public Works.....	Hon. W. G. DAVIES.....	Aug. 29, 1960	Sept. 7, 1962
Minister of Municipal Affairs.....	Hon. E. I. WOOD.....	Nov. 21, 1961	Nov. 21, 1961
Minister of Co-operation and Co-operative Development.....	Hon. F. MEAKES.....	Sept. 7, 1962	Sept. 7, 1962
Minister of Natural Resources.....	Hon. E. KRAMER.....	Nov. 19, 1962	Nov. 19, 1962

Subsection 9.—Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. There are 65* members in the Legislative Assembly, elected for a maximum period of five years. The Hon. J. Percy Page, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Dec. 19, 1959. Lieutenant-Governors since Confederation (1905) are listed in the 1960 Year Book, p. 116. Premiers since Confederation are listed in the same edition, p. 117.

Each member of the Legislative Assembly (except the Speaker and the Deputy Speaker) receives a sessional indemnity of \$3,000 plus \$1,500 expense allowance plus \$15 for each day during the session when he is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional indemnity is \$4,750 plus \$2,250 expense allowance and the Deputy Speaker's sessional indemnity is \$4,000 plus \$2,000 expense allowance. Each also receives \$15 for each day during the session when he is necessarily absent from his ordinary place of residence. The Premier, in addition to the sessional indemnity, receives \$14,000, each of the other Ministers receives \$11,000 and each member of the Opposition receives \$625; there is no Opposition Leader in the present Legislature.

*63 members, following adjustment of constituencies immediately preceding the General Election of June 17 1963.

27.—Legislatures of Alberta, 1935-60, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82, and for 1924-34 in the 1938 edition, p. 117.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1935	8th.....	9	Feb. 6, 1936	Feb. 16, 1940
Mar. 21, 1940	9th.....	4	Feb. 20, 1941	July 7, 1944
Aug. 8, 1944	10th.....	5	Feb. 22, 1945	July 16, 1948
Aug. 17, 1948	11th.....	5	Feb. 17, 1949	June 28, 1952
Aug. 5, 1952	12th.....	3	Feb. 19, 1953	May 12, 1955
June 29, 1955	13th.....	5	Aug. 17, 1955	May 9, 1959
June 18, 1959	14th.....	5	Feb. 11, 1960	May 9, 1963

28.—Eighth Ministry of Alberta, as at Apr. 30, 1963¹

(Party standing at latest General Election, June 18, 1959: 61 Social Credit, 1 Liberal, 1 Progressive Conservative, 1 Coalition and 1 Independent Social Credit.)¹

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of Council and Attorney General.....	HON. ERNEST C. MANNING.....	Sept. 3, 1935	{May 31, 1943 Aug. 2, 1955
Minister of Municipal Affairs.....	HON. ALFRED J. HOOKE.....	Apr. 20, 1945	Aug. 2, 1955
Minister of Highways.....	HON. GORDON E. TAYLOR.....	Dec. 27, 1950	May 1, 1951
Minister of Education.....	HON. ANDERS O. AALBORG.....	Sept. 9, 1952	Sept. 9, 1952
Minister of Public Welfare.....	HON. LEONARD C. HALMRAST.....	Jan. 3, 1953	Oct. 15, 1962
Minister of Lands and Forests.....	HON. NORMAN A. WILLMORE.....	Nov. 10, 1953	Aug. 2, 1955
Provincial Treasurer.....	HON. EDGAR W. HINMAN.....	Dec. 23, 1954	Aug. 2, 1955
Minister of Public Works.....	HON. FRED. C. COLBORNE.....	Aug. 2, 1955	Nov. 30, 1962
Minister of Industry and Development and Minister of Mines and Minerals.....	HON. A. RUSSELL PATRICK.....	Aug. 2, 1955	{Sept. 1, 1959 Oct. 15, 1962
Minister of Labour and Minister of Telephones.....	HON. RAYMOND REIERSON.....	Aug. 2, 1955	Sept. 22, 1959
Minister of Health.....	HON. DR. J. DONOVAN ROSS.....	Sept. 18, 1957	Sept. 18, 1957
Minister of Agriculture.....	HON. HARRY E. STROM.....	Oct. 15, 1962	Oct. 15, 1962
Provincial Secretary.....	HON. AMBROSE HOLOWACH.....	Oct. 15, 1962	Oct. 15, 1962
Minister without Portfolio.....	HON. IRA McLAUGHLIN.....	Nov. 30, 1962	Nov. 30, 1962
Minister without Portfolio.....	HON. ETHEL S. WILSON.....	Nov. 30, 1962	Nov. 30, 1962

¹ At a General Election held June 17, 1963, the Social Credit Party was returned to power and all members of the Executive Council were re-elected. Party standing: 60 Social Credit, 1 Liberal, 1 Coalition and 1 Independent.

Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Maj.-Gen. the Hon. George Randolph Pearkes, Lieutenant-Governor at Apr. 30, 1963, was commissioned to office Oct. 13, 1960. Lieutenant-Governors from Confederation (1871) to 1959 are cited in the 1960 Year Book, p. 118.

The Legislative Assembly, elected for a statutory term of five years, has 52 members. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 118.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of \$4,000 and \$1,000 for expenses. There is also paid to each member a living allowance of \$25 for each day's attendance at the session and for each Saturday, Sunday or holiday that intervenes between two sittings of the House; the allowance of \$25 in any session is not paid in respect of more than 40 days. Each member also receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. Each member also receives an allowance of \$400 for telegraph and telephone expenses. In addition, the Premier receives a salary of \$17,500 and each member of the Executive Council \$15,000. The Leader of the Opposition has a special allowance of \$5,000 for expenses, the Speaker receives a special allowance of \$5,000 and the Deputy Speaker an allowance of \$1,500.

29.—Legislatures of British Columbia, 1937-61, as at Apr. 30, 1963

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83, and for 1924-37 in the 1938 edition, p. 118.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 1, 1937	19th.....	5	Oct. 26, 1937	July 22, 1941
Oct. 21, 1941	20th.....	4	Dec. 4, 1941	Aug. 31, 1945
Oct. 25, 1945	21st.....	5	Feb. 21, 1946	Apr. 16, 1949
June 15, 1949	22nd.....	4	Feb. 14, 1950	Apr. 10, 1952
June 12, 1952	23rd.....	1	Feb. 3, 1953	Mar. 27, 1953
June 9, 1953	24th.....	4	Sept. 15, 1953	Aug. 13, 1956
Sept. 19, 1956	25th.....	4	Feb. 7, 1957	Aug. 3, 1960
Sept. 12, 1960	26th.....	1	Jan. 26, 1961	1

¹ Life of Legislature not expired at Apr. 30, 1963.

30.—Twenty-Sixth Ministry of British Columbia, as at Apr. 30, 1963

(Party standing at latest General Election, Sept. 12, 1960: 32 Social Credit, 16 Co-operative Commonwealth Federation, and 4 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of the Council and Minister of Finance.....	HON. WILLIAM ANDREW CECIL BENNETT.	Aug. 1, 1952	{Aug. 1, 1952 Aug. 1, 1952 Feb. 15, 1954 Aug. 1, 1952 Aug. 1, 1952 Mar. 20, 1959
Provincial Secretary, Minister of Municipal Affairs, and Minister of Social Welfare....	HON. WESLEY DREWETT BLACK....	Aug. 1, 1952	{Aug. 1, 1952 Aug. 1, 1952 Mar. 20, 1959
Attorney-General and Minister of Industrial Development, Trade, and Commerce....	HON. ROBERT WILLIAM BONNER...	Aug. 1, 1952	Mar. 28, 1957
Minister of Lands, Forests and Water Resources.....	HON. RAY GILLIS WILLISTON.....	Apr. 14, 1954	Mar. 30, 1962
Minister of Agriculture.....	HON. FRANCIS XAVIER RICHTER...	Nov. 28, 1960	Nov. 28, 1960
Minister of Mines and Petroleum Resources...	HON. WILLIAM KENNETH KIERNAN	Aug. 1, 1952	Mar. 18, 1960
Minister of Highways.....	HON. PHILIP ARTHUR GAGLARDI...	Aug. 1, 1952	Mar. 15, 1955
Minister of Labour and Minister of Education.	HON. LESLIE RAYMOND PETERSON...	Sept. 27, 1956	Nov. 28, 1960
Minister of Health Services and Hospital Insurance.....	HON. ERIC CHARLES FITZGERALD MARTIN.....	Aug. 1, 1952	Mar. 20, 1959
Minister of Public Works.....	HON. WILLIAM NEELANDS CHANT...	Mar. 15, 1955	Mar. 15, 1955
Minister of Recreation and Conservation and Minister of Commercial Transport.....	HON. EARLE CATHERS WESTWOOD.	Sept. 27, 1956	Nov. 28, 1960

Subsection 11.—Yukon and Northwest Territories

Yukon Territory.—The Yukon was created a separate Territory in June 1898 (see p. 65). Provision is made for a local government administered by a Commissioner appointed by the Governor in Council. There is an elected Council of seven members (1961) which usually meets twice each year in Whitehorse, the seat of local government; the Council elects its own speaker. The Commissioner administers the government under instructions from the Governor in Council or the Minister of Northern Affairs and National Resources. The Commissioner in Council has power to make ordinances dealing with the imposition of local taxes, sale of liquor, preservation of game, establishment of territorial offices, maintenance of municipal institutions, issue of licences, incorporation of companies, solemnization of marriage, property and civil rights, and generally all matters of a local nature in the Territory. The Commissioner and Council in office on Apr. 30, 1963 were elected in 1961 for a three-year term.

GOVERNMENT OF THE YUKON TERRITORY

(as at Apr. 30, 1963)

Commissioner	R. G. CAMERON
Members of the Council—	
Carmacks-Kluane.....	J. LIVESKY (Speaker)
Dawson.....	G. O. SHAW
Mayo.....	R. L. McKAMEY
Watson Lake.....	D. TAYLOR
Whitehorse East.....	HERBERT E. BOYD
Whitehorse North.....	K. McKINNON
Whitehorse West.....	J. WATT
Officers of the Council—	
Territorial Secretary and Clerk of the Council.....	H. J. TAYLOR
Territorial Treasurer.....	K. McKENZIE
Legal Adviser.....	C. P. HUGHES

The Northern Administration Branch, Department of Northern Affairs and National Resources, has the responsibility for the general administration of the natural resources of the Yukon Territory, except game. The Department maintains lands and mining offices at four points in the Territory. Other departments and agencies of the Federal Government, including the Department of Justice, the Royal Canadian Mounted Police, the Departments of National Defence, Citizenship and Immigration, Mines and Technical Surveys, National Revenue, Transport, Post Office, Agriculture, Fisheries, and Public Works and the Unemployment Insurance Commission also maintain offices in the Yukon Territory.*

Northwest Territories.—As reconstituted on Sept. 1, 1905, the Northwest Territories comprise: (1) all that part of Canada north of the 60th parallel of north latitude, except the portions thereof within the Yukon Territory and the Provinces of Quebec and Newfoundland; and (2) the islands in Hudson Bay, James Bay and Ungava Bay, except those islands within the Provinces of Manitoba, Ontario and Quebec.

The Northwest Territories Act (RSC 1952, c. 331) provides for the appointment of a Commissioner to administer the government of the Territories under instructions given from time to time by the Governor in Council or the Minister of Northern Affairs and National Resources. As a matter of practice, the appointment is held by the Deputy Minister

* Further information on officials of various Federal Government departments serving the Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

of Northern Affairs and National Resources. The Northwest Territories Act, as amended, also provides for a Council of nine members, four of whom are elected in the Mackenzie District and five of whom are appointed by the Governor in Council. The Commissioner in Council has legislative powers respecting such matters as direct taxation, establishment and tenure of Territorial offices, municipal institutions, controverted elections, licences, incorporation of companies, property and civil rights, administration of justice, game, education, hospitals and generally all matters of a local or private nature. The Council meets once each year in the Territories and at least once each year in Ottawa, which is the seat of government. The resources, except game, remain under the control of the Federal Government. The administration of legislation passed by the Commissioner in Council and the management of resources under federal legislation are conducted by the Northern Administration Branch of the Department of Northern Affairs and National Resources. Administrative offices are located at a number of centres in the Territories including Fort Smith, Yellowknife, Hay River, Inuvik and Frobisher Bay.

COUNCIL OF THE NORTHWEST TERRITORIES

(as at Apr. 30, 1963)

Commissioner	R. G. ROBERTSON
Deputy Commissioner	W. G. BROWN
Members of the Council—	
Appointed.....	W. G. BROWN, D. M. COOLICAN, L. A. DESROCHERS, H. M. JONES and I. NORMAN SMITH
Elected.....	E. J. GALL, J. W. GOODALL, P. W. KAESER and K. H. LANG
Officers of the Council—	
Secretary.....	R. L. KENNEDY
Legal Adviser.....	E. R. OLSON

Section 3.—Municipal Government*

The British North America Act of 1867 placed municipal government in Canada under the control of the provincial legislatures. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or group and many to one municipality only. The types of municipal organization in existence and the nature of the municipal services provided vary greatly from region to region and are adjusted from time to time to meet changing needs and conditions.

In addition to the well-known types of organized municipalities—cities, towns, villages, counties, etc.—there are various other forms of local government organization. Certain municipal government bodies encompass a number of municipalities or parts of municipalities. For example, special district authorities (greater water and sewerage districts, drainage and irrigation districts and health units) may provide services to a number of municipalities. Similarly, metropolitan government authorities provide certain services to a number of area municipalities. In some provinces, the more sparsely settled areas do not have organized municipalities. Instead, they are divided into local improvement districts, local government districts or special areas in which the local government services are administered by officials appointed by the provincial Departments of Municipal Affairs.

* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

The major local revenue source available to municipalities is the taxation of real property. It is supplemented in varying degrees by taxation of personal property, business, persons (poll taxes) and tenants. In two provinces municipalities may levy an amusement tax, in four they may impose sales taxes on specific commodities, and in Quebec most cities have been granted the right to levy a general sales tax. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. Most urban municipalities of any size operate utilities for the provision of water and, in many instances, electricity, gas, transportation, telephone and other services. These sometimes provide surplus funds that may become available to help pay for other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of their utilities and enterprises.

In differing degrees and with varying provincial assistance, municipalities are responsible for the following services: protection to persons and property through police and fire forces, courts and local gaols, and inspection services; roads and streets; sanitation; certain health and welfare services; and some recreation and other community services. In most provinces, municipalities are responsible for levying and collecting local education taxes on property on behalf of the local schools, and often for borrowing capital funds for school construction. Local administrative responsibility for education lies with boards of trustees separate from the councils that govern municipalities (except Alberta; see p. 96).

All provinces give some form of financial assistance to their municipalities. This may be in the form of monetary grants, such as unconditional subsidies which may be spent as the municipalities see fit, or grants in aid of specific services that are the municipal responsibility. The provinces may also make loans to municipalities for capital purposes or guarantee the bonds issued by the municipalities. Other forms of indirect assistance are the resumption by the provincial governments of responsibilities formerly delegated to the municipalities and the extension of municipal taxing privileges into what were formerly considered to be provincial revenue fields. The provinces also provide various technical and consultative services to their municipalities.

The following paragraphs describe municipal organization in each province and in the Territories as at Jan. 1, 1962. In Table 31 (which gives the number of each type of municipality in each province) all fully incorporated cities, towns and villages are regarded as 'urban' municipalities.

Newfoundland.—The Province of Newfoundland has two cities—St. John's and Corner Brook. A number of the province's many settlements have been organized into 39 towns, five rural districts, three local improvement districts and 39 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense. Only about one fifth of 1 p.c. of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Supply.

Prince Edward Island.—In this province, one city and seven towns have been incorporated under special Acts and 17 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province although it is divided into school sections which have elected school boards.

Nova Scotia.—Municipal organization in Nova Scotia covers the whole of the province. The three cities operate under special charters and special legislation. Thirty-nine towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which, in themselves, do not represent units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick.—This province is divided into 15 counties which are incorporated municipalities and have direct powers of local self-government as rural municipalities, although certain of their powers often apply in both rural and urban municipalities. The six cities have special charters and the 21 towns operate under the Towns Incorporation Act. There is also one village. There are 62 local improvement districts and 10 commissions within the counties but outside the cities, towns and village; these have been incorporated for the provision of limited municipal services. The Department of Municipal Affairs exercises supervision.

Quebec.—Municipal divisions in Quebec embrace the more thickly settled areas comprising about one third of the province and the remainder is governed by the province as 'territories'. The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas and having little or no population. There are 334 villages and 1,114 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities and the 56 cities and 171 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

Because of the assumption by the province, on Apr. 1, 1961, of the Montreal Metropolitan Boulevard, both as to construction cost and maintenance, as a provincial highway, and the ability of the area municipalities to fulfil their own obligations, the active functions of the Montreal Metropolitan Corporation are now considerably decreased. It continues to service borrowings already contracted and to apportion costs incurred in the area municipalities for streets constructed on each side of the Boulevard.

Ontario.—Slightly more than one tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 43 counties, five of which are united with others for administrative purposes. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders and these provide its revenue. There are 30 cities, 158 towns, 158 villages, 574 townships and 20 improvement districts in the province. Some of each are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

The Municipality of Metropolitan Toronto, in existence since Jan. 1, 1954, encompasses one city, four towns, three villages and five townships. The Metropolitan Council is composed of the mayor, two senior controllers and the senior alderman of each of the nine wards of the City of Toronto, and the head of the council of each of the 12 suburban municipalities. The chairman is elected by the councillors and need not be a councillor of an area municipality. The Council has jurisdiction over assessments, water supply, sewerage works, metropolitan road systems, transit, municipal housing developments, community planning, parks and recreation areas, the Court House, certain health and welfare services and the correlation of educational facilities in the metropolitan area. It also controls a unified metropolitan police force and a metropolitan licensing commission. Expenditures are financed by a levy apportioned among the area municipalities. All borrowing of the area municipalities for capital purposes is done by the Municipality of Metropolitan Toronto.

Manitoba.—Manitoba has eight cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 34 towns, 37 villages and 111 rural municipalities under the Municipal Act. There are local government districts in settled areas not within municipalities where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

The Metropolitan Corporation of Greater Winnipeg has been in existence since Nov. 1, 1960. Its council is separate and distinct from those of the 16 area municipalities. The councillors are elected as individuals from ten new districts, each containing approximately the same number of voters. The council has jurisdiction over planning, zoning, land development, assessments, arterial roads, water supply, sewage disposal, transit and other services. It borrows money only for its own undertakings and leaves to its area municipalities the responsibility for welfare, police, fire protection and other services. Expenditures are financed by a proportion of the business and other taxes levied on industrial or commercial property by the area municipalities and by a uniform levy on the equalized assessment of all taxable real property in the area municipalities.

Saskatchewan.—All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 114 towns, 365 villages and 296 rural municipalities. The area so organized consists of most of the southern two fifths of the province; the remainder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three fifths is sparsely populated and without local government, although some municipal services are provided by the province through operation of the Northern Administrative Area. Municipalities are supervised by the Department of Municipal Affairs.

Alberta.—The whole Province of Alberta is under some type of municipal organization. The province has an Act applying to each type of municipality and under these Acts the Department of Municipal Affairs supervises the 10 cities, 89 towns, 158 villages, 31 municipal districts and 17 counties. The latter administer schools as well as municipal services. Municipal government for the 49 improvement districts and two special areas is provided by the Department of Municipal Affairs.

British Columbia.—Less than one half of 1 p.c. of the area of British Columbia is organized into municipalities. Additional small areas have sufficient population to require administration of local activities by the provincial government. There are 32 cities, four

towns, 59 villages and 30 districts; the latter are chiefly rural municipalities, except for those adjacent to the principal cities of Victoria and Vancouver which are largely urban in character. It should be emphasized, however, that the application of the name 'city' is somewhat different from the commonly accepted meaning, in that several of them have populations of fewer than 1,000 and perhaps one half or more would not normally be incorporated as cities in another province. Municipalities are supervised by the Department of Municipal Affairs.

Yukon and Northwest Territories.—There are two cities, Whitehorse and Dawson, and one unincorporated town, Mayo, in the Yukon Territory and two municipal districts, Yellowknife and Hay River, in the Northwest Territories, all of which provide some municipal services to their local areas. These are not shown in Table 31.

31.—Official Designation and Statistical Classification of Municipalities, by Province, as at Jan. 1, 1962

Item	Nfld. ³	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
OFFICIAL DESIGNATION ¹											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Local municipalities.....	88	25	66	115 ⁴	1,676	941	191	786	305	125	4,318
Metropolitan corporations.....	...	...	...	...	1 ⁵	1 ⁶	1 ⁷	...	...	...	3
Cities.....	2	1	3	6	56	30	8	11	10	52	169
Towns.....	47 ⁸	7	39	21	171	158	54	111	89	4	654
Villages.....	39 ⁹	17	...	1	334	57	365	158	69	1,168	1,168
Rural ¹⁰.....	...	...	24	87 ⁴	1,114	694 ¹¹	111 ¹²	296 ¹³	43 ¹⁴	30	2,304
Quebec and Ontario counties	...	...	...	...	75 ¹⁵	38	...	...	...	...	113
Totals, Incorporated Municipalities.....	88	25	66	115	1,751	979	191	786	305	125	4,431
STATISTICAL CLASSIFICATION ²											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Municipalities in Metropolitan Areas ¹⁶	2	...	3	5	116	74	17	...	13	20	250
Urban.....	2	...	3	5	95	45	9	...	8	8	172
Rural.....	...	...	1	2	21	29	8	...	5	12	78
Other urban municipalities..	86	25	40	25	467	302	71	490	249	87	1,842
Other rural municipalities...	...	...	23	85	1,093	565	103	296	43	18	2,226
Semi-urban.....	...	...	...	...	46 ¹⁷	...	...	...	...	...	46
Other.....	...	...	23	85	1,093	519	103	296	43	18	2,180
Quebec and Ontario counties	...	...	...	...	75	38	...	...	...	...	113
Totals, Incorporated Municipalities.....	88	25	66	115	1,751	979	191	786	305	125	4,431

¹ Municipalities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote 10).

² Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics, designed to bring municipalities into comparable groups for statistical presentation.

³ Census 1961 figures. ⁴ Includes 62 local improvement districts and 10 commissions.

⁵ The Montreal Metropolitan Corporation. ⁶ The Municipality of Metropolitan Toronto.

⁷ The Metropolitan Corporation of Greater Winnipeg. ⁸ Designated by the province as towns (39), rural districts (5) and local improvement districts (3); all operate under the same Act.

⁹ Classified by the province as community councils. ¹⁰ Rural municipalities are designated by different names in the different provinces.

¹¹ Includes 20 improvement districts. ¹² Includes 5 units of self-government known as suburban municipalities; excludes the unincorporated local government districts.

¹³ Excludes the 12 unincorporated local improvement districts. ¹⁴ Includes 20 county municipalities; excludes the 49 unincorporated improvement districts and 2 special areas.

¹⁵ Includes the Inter-Urban Corporation of Ile Jésus, formerly Laval County.

¹⁶ Includes municipalities shown wholly or partly in metropolitan areas by the 1961 Census, with subsequent revisions to take care of annexations, etc. Included in urban are the Montreal Metropolitan Corporation, the Municipality of Metropolitan Toronto and the Metropolitan Corporation of Greater Winnipeg.

¹⁷ Classified by the province as suburban or semi-urban.

Section 4.—Federal and Provincial Royal Commissions

Federal Royal Commissions Established.—Royal Commissions established from Feb. 1, 1962 to Apr. 30, 1963 under Part I of the Federal Inquiries Act are given here in continuation of those previously reported in the Year Books beginning with the 1940 edition, pp. 1108-1110. Any Commission established between Apr. 30, 1963 and the date of going to press will be found in the Register of Official Appointments, Chapter XXVI, Part III.

<i>Nature of Commission</i>	<i>Chief Commissioner</i>	<i>Date Established</i>
To inquire into and report upon the incidence and effects of taxation imposed by Parliament, etc., and to make recommendations for improvements in the tax laws and their administration.	KENNETH LeM. CARTER....	Sept. 25, 1962
To inquire into and report upon the problems relating to marine pilotage provided in Canada, etc., and to recommend the changes, if any, that should be made.	Hon. YVES BERNIER.....	Nov. 1, 1962

Reports of Federal Royal Commissions.—Reports of federal Royal Commissions issued during the period Jan. 1, 1962 to Apr. 30, 1963 were as follows.

Royal Commission on Transportation, established May 13, 1959:

Vol. 2, December 1961. 289p. \$2.25. (Cat. No. Z1-1959/3-2).

Vol. 3, July 1962. Ottawa, 1962. 620p. \$7.50. (Cat. No. Z1-1959/3-3).

Royal Commission on Government Organization, established Sept. 16, 1960:

Vol. 1, Management of the Public Service: Plan for management; Financial management; Personnel management; Paperwork and systems management. Ottawa, July 18, 1962. 646p. \$6. (Cat. No. Z1-1960/4-1).

Vol. 1, Abridged edition. Ottawa, July 18, 1962. \$1. (Cat. No. Z1-1960/4-1.1).

Vol. 2, Supporting services for government. October 1962. Ottawa, 1962. 436p. \$6. (Cat. No. Z1-1960/4-2).

Vol. 2, Supporting services for government:

5. Real Property. Ottawa, 1962. Pp. 23-68. 50 cents. (Cat. No. Z1-1960/4-205).

6. Purchasing and Supply. Ottawa, 1962. Pp. 73-142. 50 cents. (Cat. No. Z1-1960/4-206).

7. Transportation. Ottawa, 1962. Pp. 147-207. 50 cents. (Cat. No. Z1-1960/4-207).

8. Telecommunications. Ottawa, 1962. Pp. 213-268. 50 cents. (Cat. No. Z1-1960/4-208).

9. Printing and publishing. Ottawa, 1962. Pp. 273-307. 50 cents. (Cat. No. Z1-1960/4-209).

10. The "make or buy" problem. Ottawa, 1962. Pp. 313-359. 50 cents. (Cat. No. Z1-1960/4-210).

11. Legal services. Ottawa, 1962. Pp. 365-421. 50 cents. (Cat. No. Z1-1960/4-211).

12. Economic and statistical services. Ottawa, 1962. Pp. 17-51. 50 cents. (Cat. No. Z1-1960/4-212).

13. Public information services. Ottawa, 1962. Pp. 57-114. 50 cents. (Cat. No. Z1-1960/4-213).

14. Education services. Ottawa, 1962. Pp. 137-170. 50 cents. (Cat. No. Z1-1960/4-214).

15. Health services. Ottawa, 1962. Pp. 177-241. 50 cents. (Cat. No. Z1-1960/4-215).

16. Lending, guaranteeing and insuring activities. Ottawa, 1962. Pp. 247-297. 50 cents. (Cat. No. Z1-1960/4-216).

17. The post office. Ottawa, 1962. Pp. 303-351. 50 cents. (Cat. No. Z1-1960/4-217).

18. Miscellaneous services. Ottawa, 1962. Pp. 357-384. 50 cents. (Cat. No. Z1-1960/4-218).

Vol. 3, Supporting services for government, cont'd. Ottawa, December 3, 1962. 399p. \$7.75. (Cat. No. Z1-1960/4-3).

Vol. 4, Special areas of administration: Canadian Broadcasting Corporation; Department of National Defence; Department of External Affairs; Northern Affairs; Scientific Research and Development. Ottawa, January 21, 1963. 333p. \$7.75. (Cat. No. Z1-1960/4-4).

19. Canadian Broadcasting Corporation. Ottawa, 1963. Pp. 17-51. 50 cents. (Cat. No. Z1-1960/4-419).

20. Department of National Defence. Ottawa, 1963. Pp. 57-92. 50 cents. (Cat. No. Z1-1960/4-420).

21. Department of External Affairs. Ottawa, 1963. Pp. 97-143. 50 cents. (Cat. No. Z1-1960/4-421).

22. Northern Affairs. Ottawa, 1963. Pp. 149-180. 50 cents. (Cat. No. Z1-1960/4-422).

23. Scientific Research and Development. Ottawa, 1963. Pp. 185-322. 50 cents. (Cat. No. Z1-1960/4-423).

Vol. 5, The Organization of the Government of Canada. Ottawa, Feb. 23, 1963. \$5. (Cat. No. Z1-1960/4-5).

Report of the Committee of inquiry into the Unemployment Insurance Act, established July 17, 1961. Ottawa, November 1962. 207p. \$2. (Cat. No. Z1-1961/1).

Provincial Royal Commissions.—The following provincial Royal Commissions were established during the period Jan. 1, 1962 to Apr. 30, 1963.

<i>Province and Nature of Commission</i>	<i>Chief Commissioner or Chairman</i>	<i>Date Established</i>
NOVA SCOTIA		
To inquire into remuneration of the medical profession re ward patients at Victoria General Hospital.	FRANK ROWE.....	Jan. 26, 1962
To inquire into municipal boundaries and representation.	W. D. OUTHIT.....	June 5, 1962
NEW BRUNSWICK		
To inquire into public or municipal fiscal matters within New Brunswick.	EDWARD G. BYRNE.....	Mar. 8, 1962
To inquire into municipal government in the Municipality of Saint John.	H. CARL GOLDENBERG.....	May 29, 1962
QUEBEC		
To inquire into the financial administration of the Corporation du Sanatorium Ross.	His Hon. Judge VICTOR CHABOT.....	June 4, 1962
To inquire into the financial administration of the Corporation du Sanatorium Bégin.	His Hon. Judge VICTOR CHABOT.....	June 4, 1962
To inquire into the general administration of l'Institut Albert Prévost.	His Hon. ANDRÉ RÉGNIER.....	July 10, 1962
To inquire into the financial administration of l'Hôpital Général Fleury, Inc., since June 1, 1961.	His Hon. JEAN TELLIER.....	July 26, 1962
To inquire into the distribution of natural gas in the province.	His Hon. Judge JACQUES VADBONCOEUR	July 26, 1962
ONTARIO		
To inquire into and report upon the conduct of and the performance of duties by the members of the Metropolitan Toronto Police Force involved in the interrogation and detention of Dr. Norbert Leiner.	Hon. DALTON C. WELLS.....	Feb. 1, 1962
MANITOBA		
To inquire into the operation and activities of the Metropolitan Corporation of Greater Winnipeg and the area municipalities thereunder and to report its findings and recommendations to the Lieutenant-Governor in Council.	LORNE R. CUMMING.....	Oct. 1, 1962
SASKATCHEWAN		
To inquire into the Mechanics' Lien Act in light of modern economic conditions with a view to the formulation of recommendations for its amendment or repeal.	Hon. H. F. THOMSON.....	Mar. 2, 1962
To inquire into difficulties certain physicians have encountered in obtaining or retaining membership on the medical staff of hospitals or in the enjoyment of professional privileges in hospitals.	Hon. H. F. THOMSON.....	July 19, 1962
BRITISH COLUMBIA		
To inquire into and study the Workmen's Compensation Act and its administration.	The Hon. Chief Justice ALEXANDER CAMPBELL DESBRISAY.	Feb. 1, 1962

PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT

Section 1.—Financial Administration*

The financial affairs of the Government of Canada are administered and controlled under the fundamental principles that no tax shall be imposed and no money shall be spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America Act; this Act provides that all taxing and appropriating measures must originate in the House of Commons and all requests for grants must come from the Crown through responsible Ministers, and for such requests the Government is solely responsible. In practice, financial control is exercised through a budgetary system based on the principle that all the financial needs of the Government for each fiscal year be considered at one time so that both the current condition and the prospective condition of the public treasury are clearly in evidence.

Estimates and Appropriations.—In the latter part of the calendar year, at the request of the Minister of Finance, each of the several departments prepares its estimates for the following fiscal year and submits them by a specified date to the Treasury Board. This Board is a Committee of the Queen's Privy Council for Canada and consists of the Minister of Finance as chairman and five other Ministers named by the Governor in Council, with such additional members of the Privy Council as the Governor in Council may nominate to serve as alternates. A senior officer of the Department of Finance acts as secretary to the Board and the necessary staff is provided by that Department. Under the Financial Administration Act, the Board has a statutory duty to advise the Governor in Council on matters relating to finance, estimates, expenditures, financial commitments, establishments, revenues, accounts, terms and conditions of employment of persons in the public service and general administrative policy in the public service.

On receipt, departmental estimates are assembled by officers of the Treasury Board, comparisons are made with the expenditures of previous years and digests of supporting data and other pertinent information are prepared. The Board reviews each departmental submission in the light of probable revenues and of governmental policy generally, usually consulting the appropriate Minister and departmental officials. Expenditure proposals may be rejected or reduced and unresolved differences of opinion may be referred to the Cabinet for decision. When the Board is satisfied with their substance and form, these estimates, known as the Main Estimates, are submitted to the Cabinet and later to the Governor General for approval and are then laid before the House of Commons.

On motion of the Minister of Finance, the estimates are referred for consideration to the Committee of Supply, which is a committee of the whole House. However, the estimates of certain departments may first go to select committees of the House; these, after being reported upon to the House, are referred back to the Committee of Supply. The consideration of the estimates usually extends over a period of several months. Each vote is the subject of a separate resolution and Members of the House may question the Minister on any item but no private member or Minister on his own responsibility can introduce any new expenditure proposal or any amendment to an estimates item that would result in an increased expenditure. When the examination of the individual items has been completed, the estimates are referred to the Committee of Ways and Means, also a committee of the whole House, which is asked to consider a resolution for the introduction of a Bill to appropriate money to meet the requirements as approved in the Committee of Supply. When such resolution is passed, an appropriation Bill is introduced which, when approved by the House of Commons and the Senate, is given Royal Assent and becomes law.

* Prepared under the direction of H. R. Balls, Comptroller of the Treasury, Department of Finance, Ottawa.

Grants in the Appropriation Acts are grants to the Crown and funds cannot be disbursed until supply, voted by Parliament to the Crown, is released by a warrant prepared on an Order of the Governor in Council and signed by the Governor General.

As weeks or months may elapse after the commencement of the fiscal year before the main Appropriation Act is passed, funds are made available for the conduct of government functions by the passage of an interim supply Bill granting one twelfth or one sixth of the total of each item in the estimates, equivalent to one or two months' supply, respectively. Additional interim supply Bills may be introduced if required, awaiting Parliament's detailed consideration of the estimates. In addition, to cover any new and unforeseen requirements that might arise during the year, supplementary estimates are usually introduced after some months of the fiscal year have elapsed, and just prior to the end of the fiscal year further supplementary estimates are laid before the House. These supplementary estimates are dealt with in the same manner as the Main Estimates.

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt, family allowances and old age assistance payments, which have been authorized under the provisions of other statutes. Although it is not necessary for Parliament to pass annually on these items, they are included in the Main Estimates for purposes of information. Statutory provision is also made for the expenditure of public money in emergencies where no specific parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, upon the report of the Minister of Finance that there is no appropriation for the expenditure and upon the report of the appropriate Minister that the expenditure is urgently required, may order the issuance of a special warrant authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant is published in the *Canada Gazette* within thirty days of issue. The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the Service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the estimates for the department or agency concerned.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the Government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust and insurance, pension and guaranty accounts which the Government holds or administers, including the old age security fund which is operated as a separate entity. Although these disbursements are excluded from the calculation of the annual budgetary surplus or deficit, they are all subject to appropriation by Parliament either in the annual Appropriation Acts or in other legislation.

The Budget.—Some time after the Main Estimates have been introduced, the Minister of Finance presents his annual Budget Speech in the House of Commons. Budget papers, tabled for the information of Parliament on the previous day, include a general review of economic conditions and a preliminary review of the Government's accounts for the fiscal year then ending. The Budget Speech itself reviews the state of the national economy and the financial operations of the Government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for supplementary and further supplementary estimates and probable lapsings. At the close of his address, the Minister tables the formal resolutions for changes in the existing tax rates and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money Bills. These resolutions give notice of the amendments which the Government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a

commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the Speech.

The Budget Speech is delivered in support of a motion that the House go into Committee of Ways and Means, the debate on which usually lasts for several weeks. With the passage of the motion, the way is clear for the consideration of the Budget resolutions and, when these have been approved by the Committee, a report to this effect is made to the House and the tax Bills are introduced and thereafter dealt with in the same manner as all other government financial legislation.

Revenues and Expenditures.—The administrative procedures whereby revenues are collected and expenditures are made are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. The Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. For the actual custody of public money, use is made of the Bank of Canada and the chartered banks. Balances are allocated to the various chartered banks on the basis of a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the Government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund are in excess of requirements for the immediate future they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

The principal agencies exercising control over expenditures are the Treasury Board (previously described) and the Comptroller of the Treasury, who is a senior officer of the Department of Finance, with representatives who act as accounting and disbursing officers stationed in all the principal departments.

The Treasury Board exercises detailed central control over the budgets, programs and staffs of departments and over financial and administrative matters generally. Although the most important part of this control function is exercised during the consideration of the estimates, the Board maintains continuous control over certain types of expenditure to ensure that the scale of activities and commitments for the future is held within approved policies, that departments follow uniform, efficient and economical practices, and that the Government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure that the decisions of Parliament, the Government and Ministers in regard to expenditures are enforced, there is a centralized accounting and disbursing system. The Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except upon the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, and certificates that the work has been performed, the material supplied or the services rendered and that the price charged is reasonable or according to contract, together with such documents as may be required, are presented to the Comptroller of the Treasury. If the charge is a lawful one against the appropriation and does not exceed the amount of the appropriation or reduce it below the amount necessary to meet other commitments, and does not contravene any applicable legislative or executive requirements, the Comptroller will make the payment.

However, if he declines to make a payment, disallows an item in an account or refuses to give a certificate, the Minister concerned may report the circumstances to the Treasury Board for decision and the Board may confirm or overrule the action of the Comptroller. The Comptroller may transmit to the Board any requisition with respect to which he desires its direction and the Board may order that payment be made or refused.

At the beginning of each fiscal year each department submits to the Treasury Board, through the Comptroller, a division or allotment of each item included in its estimates. Once approved by the Board, these allotments cannot be varied or amended without the approval of the Board and expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, the Comptroller records and controls commitments due to come in course of payment within the year for which Parliament has provided or has been asked to provide appropriations. The Government, through the Treasury Board and the Comptroller, also maintains careful control over commitments made under contract that will fall due in succeeding years, since it must be prepared in future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for thirty days subsequent to Mar. 31 payments may be made and charged to the previous year's appropriations for debts incurred prior to the end of that fiscal year.

Under the Financial Administration Act, every payment pursuant to an appropriation is made under the control and direction of the Comptroller by cheque drawn on the account of the Receiver General or by such other instrument as the Treasury Board may direct. In practice, the paid Comptroller's cheques are cleared daily by the chartered banks through the Bank of Canada to the Cheque Adjustment Branch of the Comptroller's Office, and reimbursement is made by means of a cheque drawn on the Receiver General's account with the Bank of Canada.

Public Debt.—In addition to the collection and disbursement of public money for budgetary and non-budgetary purposes, the Government receives and disburses substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at such rate of interest and subject to such terms and conditions as the Governor in Council may approve. Although the specific authority of Parliament is required for new borrowings, the Financial Administration Act authorizes the Governor in Council to approve the borrowing of such sums of money as are required for the redemption of maturing or called securities and, to ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the Government in the management of the public debt.

Accounts and Financial Statements.—Under the Financial Administration Act, accounts are kept to show the revenues of Canada, the expenditures made under and the commitments chargeable against each appropriation, the other payments into and out of the Consolidated Revenue Fund, and such of the assets and direct and contingent liabilities as the Minister of Finance believes are required to give a true and fair view of the financial position of Canada. The statement of assets and liabilities is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded currently as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are not recorded on the statement of assets and liabilities.

Annually, on or before Dec. 31 or, if Parliament is not then in session, within fifteen days after the commencement of the ensuing session, the *Public Accounts* is laid before the House of Commons by the Minister of Finance. The *Public Accounts* contains a survey of the financial transactions of the fiscal year, statements of the revenues and expenditures for the year and of the assets and direct and contingent liabilities as at the end of the year,

together with such other accounts and information as are necessary to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public Accounts*. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General.—The Government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit for the purposes of reporting whether the accounts have been faithfully and properly kept and whether the money has been expended for the purposes for which it was appropriated by Parliament and the expenditures have been made as authorized; any audit before payment is the responsibility of the Comptroller of the Treasury. With respect to revenues, the Auditor General is required to ascertain that all public money is fully accounted for and that the rules and procedures applied are sufficient to ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he is required to satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control such property. The Auditor General reports to Parliament the results of his examination, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the Government any matter which in his opinion calls for attention so that remedial action may be taken promptly.

Public Accounts Committee.—It is the usual practice to refer the *Public Accounts* and the *Auditor General's Report* to the Public Accounts Committee of the House of Commons, which may review them and report its findings and recommendations to the House of Commons.

Section 2.—Departments, Boards, Commissions, etc.*

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Though it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in later Chapters of this volume. The Index will be useful in locating required information.

Department of Agriculture.—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch; reclamation and development by the Prairie Farm Rehabilitation Administration, the Maritime Marshland Rehabilitation Administration and the Agricultural Rehabilitation and Development Administration; security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act and the Agricultural Stabilization Act. The Farm Credit Corporation and the Board of Grain Commissioners are responsible to Parliament through the Minister of Agriculture.

Air Transport Board.—The Air Transport Board was established in 1944 by amendment of the Aeronautics Act. The Board is responsible for the economic regulation of commercial air services in Canada and for advising the Minister in the exercise of his duties and powers under the Act in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad, and to foreign air services operating into Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Board reports to Parliament through the Minister of Transport.

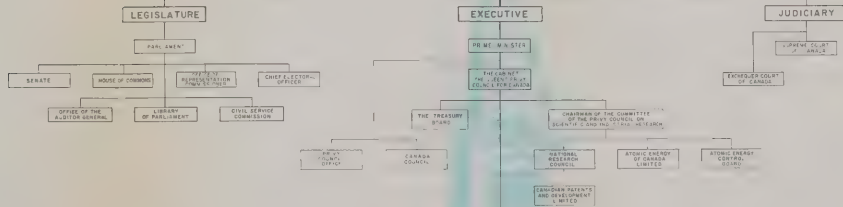
* As at Apr. 30, 1963; any major changes taking place between that date and the time of going to press will be carried in an Appendix to this volume.

THE GOVERNMENT OF CANADA

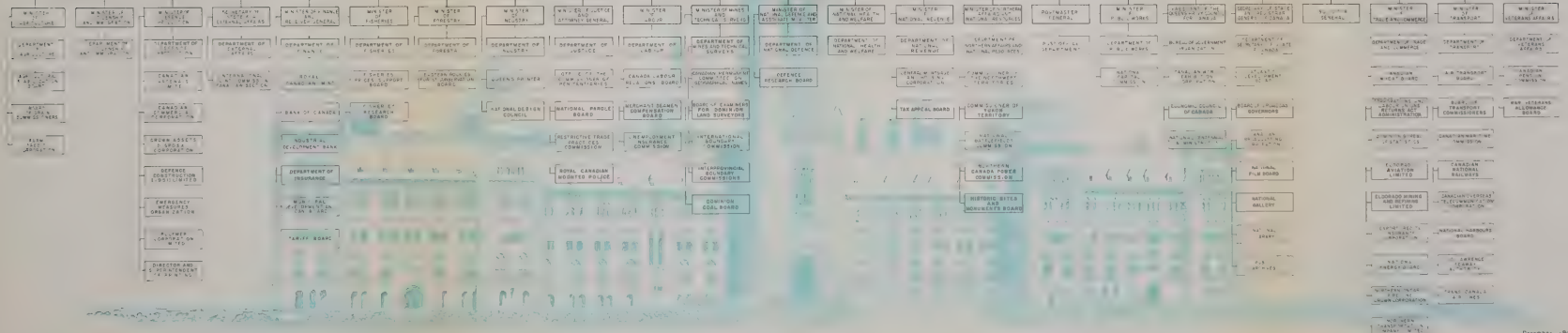
THE SOVEREIGN

THE GOVERNOR GENERAL

OFFICE OF THE SECRETARY
TO THE GOVERNOR GENERAL



DEPARTMENTS AND AGENCIES



Lines of responsibility are often inconclusive; not certain semi-independent agencies, though each responsible to a Minister of the Crown, are administered as departmental branches.

Auditor General's Office.—This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Board of Broadcast Governors.—This Board, established under the provisions of the Broadcasting Act which was assented to on Sept. 6, 1958, is given authority to regulate radio and television broadcasting in Canada. The Board has authority to regulate the establishment and operation of both public and private broadcasting stations and networks of stations. Applications for licences to establish new broadcasting stations, for changes in the facilities of existing stations or for changes in the ownership or in the share structure of licensees are referred to the Board by the Minister of Transport for a recommendation before being dealt with. The Board has three full-time and twelve part-time members and reports to Parliament through the Secretary of State.

Board of Grain Commissioners.—Constituted in 1912 under the Canada Grain Act, now the Canada Grain Act, 1930 (RSC 1952, c. 25), the Board of Grain Commissioners provides general supervision over grain handling in Canada by licensing elevator operators, inspecting and weighing grain en route to and shipped from terminal elevators, and other services. The Board, comprising a Chief Commissioner and two Commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the *Canada Gazette* and reports to Parliament through the Minister of Agriculture.

Board of Transport Commissioners.—The powers of this Board, which was organized as the Board of Railway Commissioners in 1904, have been extended from time to time until today it has regulatory and judicial functions dealing with almost all aspects of railway activity including location, construction and operation of lines, rates and charges. It is also entrusted with the regulation of other transportation and communication agencies, including express companies, telegraph companies, telephone companies other than those provincially or municipally controlled, international bridges and tunnels and inland shipping. The Board reports to Parliament through the Minister of Transport.

Canadian Government Specifications Board.—This is an interdepartmental body composed of the Deputy Heads of 24 Federal Government departments and agencies. The Board operates under the auspices of the National Research Council through the medium of committees in which government and industry co-operate on a voluntary basis. The Board prepares specifications in commodity fields and for materials, processes and equipment required by government agencies, and arranges for necessary testing and research. An Index of Specifications is available on request to the CGSB Secretary, National Research Council, Ottawa.

Canadian Pension Commission.—This Commission, established in 1933 by amendments to the Pension Act (RSC 1952, c. 207), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates upon all claims for pension in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X inclusive of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service related to the World War II effort. It also adjudicates on claims for pension under various other measures, including the Flying Accidents Compensation Order and the RCMP Continuation Act; authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces; and administers various trust funds established by private individuals for the benefit of veterans and their dependants.

It consists of eight to twelve Commissioners and up to five *ad hoc* Commissioners appointed by the Governor in Council. Its chairman has the rank and powers of a Deputy Head of a department and the Commission reports to Parliament through the Minister of Veterans Affairs.

Chief Electoral Office.—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1960, c. 39, and amendments thereto), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer reports to Parliament through the Secretary of State.

Department of Citizenship and Immigration.—This Department was constituted in December 1949 (RSC 1952, c. 67) and came into existence on Jan. 18, 1950 under the Minister of Citizenship and Immigration. Most departmental work is carried on through four branches. The Canadian Citizenship Branch assists governmental and non-governmental agencies engaged or interested in facilitating the adjustment and integration of newcomers and in making Canadians conscious of their privileges and responsibilities as citizens. The Canadian Citizenship Registration

Branch administers the Canadian Citizenship Act and is the custodian of all records under that Act and all Naturalization Acts previously in force. The Immigration Branch administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants, the exclusion or deportation of undesirables and the settlement or establishment of immigrants in Canada. The activities of the Indian Affairs Branch include management of all Indian affairs. Its organization consists of a headquarters office at Ottawa, a regional supervisory staff, and 89 local agencies in the field.

Civil Service Commission.—The Civil Service Commission of Canada dates from the Civil Service Act of 1908. Under this Act the Commission was given the responsibility of applying, wherever possible, the principle of appointment by merit in filling permanent positions within departmental headquarters at Ottawa, termed the "inside service". The Civil Service Act of 1918 extended the competitive system of appointments to cover the outside as well as the inside service and temporary as well as permanent appointments. It also gave the Civil Service Commission various other responsibilities in the field of personnel administration including responsibility for promotion, for classification of positions and for recommending rates of pay.

The Civil Service Act of 1961, which came into force on Apr. 1, 1962, has three main features. First, it preserves the independence of the Civil Service Commission and carries forward and strengthens all the fundamental principles of the merit system. Secondly, it clarifies the role of the Civil Service Commission in those other areas of personnel administration with which it is concerned but which do not bear directly upon the merit system. Thirdly, it confers on staff associations the right to be consulted on matters that have to do with remuneration and conditions of employment.

The Act applies to about 130,000 employees in all the departments and certain agencies of government and this constitutes the "civil service" within the legal meaning of that term. The "public service" is defined as those departments and agencies which are listed in Schedule A of the Public Service Superannuation Act and which embrace about 180,000 employees including the 130,000 under the Civil Service Act. This definition of public service does not include certain Crown corporations.

The Civil Service Commission is responsible only to Parliament and not to the executive government and reports to Parliament through the Secretary of State. It consists of three members, one of whom is chairman. Each member of the Commission is appointed by the Governor in Council for a term of ten years and has the rank and standing of a Deputy Minister. The Commission has a staff of more than 700 persons located in its headquarters at Ottawa and in its field offices at St. John's, Nfld., Halifax, N.S., Moncton, N.B., Saint John, N.B., Quebec, Que., Montreal, Que., Toronto, Ont., London, Ont., Winnipeg, Man., Regina, Sask., Saskatoon, Sask., Edmonton, Alta., Calgary, Alta., Vancouver, B.C., and Victoria, B.C.

Department of Defence Production.—This Department was established on Apr. 1, 1951 under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended). Under this Act the Minister is given, with certain exceptions, authority to buy defence supplies and construct defence projects required by the Department of National Defence. The Minister may, if authorized by the Governor General in Council, undertake for an associated government anything he may undertake for the Canadian Government. In addition, all powers, duties and functions that theretofore were vested in the Minister of Trade and Commerce under any contract, agreement, lease or other writing entered into pursuant to the Department of Munitions and Supply Act, 1939, or the Defence Supplies Act, 1950, are vested in the Minister of Defence Production.

Broadly, the Department's functions are to procure military goods, to construct defence installations and to organize industry for defence as required on behalf of the Department of National Defence, other government departments, and associated governments; to promote the expansion of defence production facilities and the development of defence-supporting industries, particularly of strategic resources important for the defence of Canada and its allies; and to ensure adequate supplies of essential materials and services for defence requirements. The main procurement units of the Department are five production branches—Aircraft, Armament, Electronics, Machine Tool and Shipbuilding—and a General Purchasing Branch. Major offices for foreign procurement are located at London, England, and Washington, U.S.A.; the General Purchasing Branch has 14 district purchasing offices located throughout Canada for local or urgent procurement. In addition, there are various service branches which include Administration, Comptroller's, Economics and Statistics, Financial Adviser's, Industrial Security, Legal, and Secretary's. The Emergency Supply Planning Branch is responsible for planning economic controls for a national emergency.

The following Crown companies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Canadian Commercial Corporation, Crown Assets Disposal Corporation, Defence Construction (1951) Limited, and Polymer Corporation Limited. The Minister is at present the Chairman of the Committee of the Privy Council on Scientific and Industrial Research and is responsible to Parliament for the Emergency Measures Organization.

Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; the subjects of its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who reports to Parliament through the Minister of Trade and Commerce.

Emergency Measures Organization.—This Organization was established in June 1957 for the purpose of co-ordinating civil emergency planning. On Sept. 1, 1959, the Department of National Defence, Health and Welfare, and Justice became responsible for specific civil defence functions and the Emergency Measures Organization for all other aspects of planning civil emergency measures.* The Organization reports to Parliament through the Minister of Defence Production.

Department of External Affairs.—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by a Deputy Under-Secretary who is also Legal Adviser and by four Assistant Under-Secretaries and is advised by the officers in charge of the various divisions. The divisional heads are each responsible for a part of the work of the Department and they are assisted by Foreign Service Officers, administrative officers and an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. There are 76 diplomatic, consular and other missions maintained abroad by the Department. In 29 additional countries, Canada is represented by non-resident Ambassadors or High Commissioners.

The work of the Department at Ottawa is performed by 25 units, comprising 23 divisions and two sections. The divisions may be grouped into three categories—area, functional and administrative. There are six area divisions—African and Middle Eastern, Commonwealth, European, Far Eastern, Latin American and United States; twelve functional divisions—Communications, Consular, Defence Liaison (1), Defence Liaison (2), Disarmament, Economic, Historical, Information, Legal, Passport, Protocol and United Nations; and five administrative divisions—Administrative Services, Finance, Personnel, Registry, and Supplies and Properties. The two sections are Inspection Service and Liaison Services.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States.

Department of Finance.—This Department was created by Act of Parliament in 1869 and now operates under the Financial Administration Act (RSC 1952, c. 116). The Department is responsible for the financial administration of Canada including the raising of money required for the various governmental activities by way of taxation or borrowing. The Comptroller of the Treasury, an officer of the Department, is responsible for all government disbursements. The work of the Department is organized in five principal divisions: Financial Affairs, Economic Affairs, Taxation, Federal-Provincial-Municipal Relations, and Treasury Board. The Royal Canadian Mint is a branch of the Department and the Inspector General of Banks is an officer of the Department. The Tariff Board and the Bank of Canada report to Parliament through the Minister of Finance.

Department of Fisheries.—The Department of Fisheries was first organized under a Minister of Fisheries in 1930. Prior to that date the federal fisheries services were maintained by the former Department of Marine and Fisheries, established in 1868. The provinces, under various arrangements, have certain administrative responsibilities in the fisheries but the legislative authority for the regulations of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: conservation and development of the fisheries through the enforcement of fishing regulations, the operation of fish culture establishments, management and improvement of spawning streams and control of predators; inspection of fish products for quality control and the encouragement of industrial development; promotion of the greatest utilization of fishery products and a proper public understanding of the resource and the industry. The Department administers the Fishermen's Indemnity Plan to assist fishermen in the event of loss or serious damage to their fishing vessels or lobster traps.

Agencies connected with the Department are the Fisheries Prices Support Board and the Fisheries Research Board of Canada. The Department is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, the Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, and North Pacific Fur Seal.

Fisheries Research Board.—The Fisheries Research Board operates under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53). It has been active as a fisheries research body since 1898, first as the Board of Management of the Canadian Marine Biological Station and later (1912) as the Biological Board of Canada.

* On July 1, 1963, the Organization was given the responsibility of directing and administering the Civil Defence College at Arrnprior, Ont. (See Part III of Chapter XXV on Defence of Canada.)

The Board operates under the Minister of Fisheries and membership consists of a full-time chairman and not more than 18 other members. The majority of Board members are scientists, and other members are representative of the fishing industry and the Department of Fisheries.

The Board operates four biological stations and an Arctic Unit across Canada, also three technological stations with two technological application units and two oceanographic groups. It serves as the scientific arm of the Department of Fisheries and its principal objective is to increase the scope and value of Canadian fisheries through scientific research.

Department of Forestry.—Established in October 1960 from elements of the Departments of Northern Affairs and National Resources and of Agriculture, the Department of Forestry conducts comprehensive programs of research relating to forestry and the utilization of forest products, and carries out economic studies relating to forest resources and the forest industries. Through a developing information program it seeks to promote greater public understanding of the proper management, protection and use of the forest resources. Financial assistance is offered to the provinces under agreements authorized by the Governor in Council in order to expedite progress in specific forestry programs. It carries out forest surveys and provides technical advice and assistance to other agencies of the Federal Government which are responsible for the administration of forest lands. The Department co-operates with international organizations concerned with forestry and in which Canada maintains membership, and the Minister of Forestry reports to Parliament for the Eastern Rockies Forest Conservation Board.

Department of Insurance.—The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, who has the status of a Deputy Head, the Department administers the statutes of Canada applicable to: insurance, loan and trust companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; and Civil Service Insurance.

Under the relevant provincial statutes the Department examines trust companies incorporated in the Provinces of Manitoba and New Brunswick and loan and trust companies incorporated in the Province of Nova Scotia.

International Joint Commission.—This Commission was established under a Britain-United States treaty signed Jan. 11, 1909 and ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada) is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Department of Justice.—This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71). It provides legal services to the Government and various government departments including preparing and settling government legislation, settling instruments issued under the Great Seal of Canada, regulating and conducting litigation for or against the Crown, superintending the acquisition of property and prosecutions under federal legislation other than the Criminal Code, administering federal statutes dealing with legal matters and providing administrative services for the Supreme Court of Canada and the Exchequer Court. The Department also superintends the penitentiaries and administers the prison system of Canada and administers the provisions of Canadian anti-combine legislation.

The Commissioner of the Royal Canadian Mounted Police operates under the direction of the Minister of Justice who also reports to Parliament for the National Parole Board and the Restrictive Trade Practices Commission.

Department of Labour.—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of fair wages and hours of labour; reinstatement in civil employment; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; technical and vocational training assistance; vocational rehabilitation of disabled persons; annual

vacations with pay. It promotes joint consultation in industry through labour-management committees; organizes manpower utilization programs, e.g., farm labour; and operates a Women's Bureau. The Department publishes the *Labour Gazette* and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Canada Labour Relations Board acts on behalf of, and the National Technical and Vocational Training Advisory Council and the National Advisory Council on Rehabilitation of Disabled Persons act in an advisory capacity to the Minister of Labour, and the Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization. The Unemployment Insurance Commission, which maintains the National Employment Service, reports to Parliament through the Minister of Labour. The National Productivity Council reports through the Ministers of Labour and of Trade and Commerce.

Library of Parliament.—The Library of Parliament as such was established in 1871 (SC 1871, c. 21) although it existed earlier. It currently functions under RSC 1952, c. 166 and SC 1955, c. 35. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also responsible for the House of Commons Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, Members of the Privy Council, Members of the Senate and the House of Commons, Officers of the two Houses, Justices of the Supreme Court of Canada and the Exchequer Court, and members of the Press Gallery. In addition, books are lent to other libraries and government agencies and reference service is given to scholars. The Parliamentary Librarian has the rank of a Deputy Head of a Department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a Joint Committee appointed by the two Houses.

Department of Mines and Technical Surveys.—This Department was created by an Act of Parliament (SC 1949, c. 17) which received Royal Assent on Dec. 10, 1949. Its establishment resulted from the reorganization of certain former departments. A primary function of the Department is to provide technological assistance in the development of Canada's mineral resources through investigations and research in the fields of geology, mineral dressing and metallurgy. The Department establishes the framework of surveys throughout the country that provides control for all surveying and mapping in Canada. It produces the base maps used in the development of Canada's natural resources, conducts all the charting of Canada's coastal and inland waters, and issues official sailing directions and Canadian sea and air navigation charts. The Department is under the Minister of Mines and Technical Surveys and is divided into six branches: the Surveys and Mapping Branch, the Marine Sciences Branch, the Geological Survey of Canada, the Mines Branch, the Dominion Observatories and the Geographical Branch. The Mineral Resources Division, a unit of head office, gives its whole attention to matters concerned with the economics of mineral resources development.

Major moves were made recently to implement the oceanography program: (1) the establishment of the Polar Continental Shelf Project to carry out a long-term investigation of the continental shelf lying north and west of the Canadian Arctic Archipelago and of the waters above it, together with the islands of the Archipelago and the straits and sounds between the islands; and (2) the setting up of a \$4,500,000 oceanographic institute in the Bedford Basin near Halifax with facilities for study in any phase of the science. The Department's Marine Sciences Branch was established in April 1962.

The Department administers the Explosives Act which regulates the manufacture, testing, sale, storage and importation of explosives, and the Emergency Gold Mining Assistance Act which provides cost-aid to the Canadian gold mining industry.

Boards and Commissions are: Canadian Permanent Committee on Geographical Names; Board of Examiners for Dominion Land Surveyors; the International Boundary Commission; and the Interprovincial Boundary Commissions. The Minister of Mines and Technical Surveys reports to Parliament for the Dominion Coal Board.

Department of National Defence.—The Department of National Defence was established on Jan. 1, 1923 by the Department of National Defence Act, 1922, and was an amalgamation of the Department of Militia and Defence, the Naval Service and the Air Board. The Department and the Canadian Forces (the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force) now operate under the National Defence Act, 1950 (RSC 1952, c. 134).

In 1940 additional Ministers for Naval and Air Services were appointed and the Department was organized under a Minister of National Defence and two additional Ministers so that there was a Minister and staff for each of the Armed Services. Upon demobilization of the wartime Forces the appointment of Ministers of National Defence for Naval Services and Air Services ceased, and the Armed Forces were, in 1946, again administered by the Minister of National Defence without additional Ministers. Under the National Defence Act, the Canadian Forces are being administered solely by the Minister of National Defence and the Associate Minister of National Defence.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, now functions under the National Defence Act. The Chairman of the Board has a status equivalent to that of a Chief of Staff of one of the Canadian Forces.

National Energy Board.—This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Trade and Commerce.

National Film Board.—The National Film Board, established in 1939, operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine members—a Government Film Commissioner, appointed by the Governor in Council, who is Chairman of the Board, three members from the public service of Canada and five members from outside the public service. The Board reports to Parliament through the Secretary of State. The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films “designed to interpret Canada to Canadians and to other nations”.

Department of National Health and Welfare.—This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74). It was originally formed as the Department of Health in 1919 and later became part of the Department of Pensions and National Health. That Department was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is composed of three branches—Administration, Health, and Welfare—and is administered by two Deputy Ministers.

The Department has charge of all matters relating to the promotion or preservation of the health, social security and social welfare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Sect. 3, pp. 124-125, and is also responsible for: the administration of the National Health Program under which grants are made available to the provinces for the development and extension of health services; the federal aspects of emergency health and welfare services; health and safety in the peaceful uses of atomic energy and other sources of radiation affecting the population; the provision of health, medical and hospital services to Indians and Eskimos and to other elements of the population in the Yukon and Northwest Territories; the provision of assistance and consultative services to the provinces upon request on blindness control, child and maternal health, mental health, dental health, nursing, medical rehabilitation, nutrition and hospital design; the inspection and medical care of immigrants and seamen and the administration of marine hospitals; the supervision of public health facilities on railway, water and other forms of transportation; the enforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of civil servants and other government employees; the collection, publication and distribution, subject to the provisions of the Statistics Act, of information relating to public health, improved sanitation and social and industrial conditions affecting the health of Canadians. It co-ordinates and assists international welfare activities in which Canada is engaged and administers a system of grants to the provinces for professional welfare training, welfare research and general welfare services.

National Library.—The National Library came formally into existence on Jan. 1, 1953, with the proclamation of the National Library Act (RSC 1952, c. 330). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the National Union Catalogue, which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. Its book collection is growing steadily and at the end of 1961 consisted of about 250,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Parole Board.—The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole. It is composed of a chairman and three members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Minister of Justice.

Department of National Revenue.—From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was

changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as sales and excise taxes, by ports and outposts. The Taxation Division is responsible for the assessment and collection of income taxes and estate taxes by 29 district offices throughout Canada.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board and the Central Mortgage and Housing Corporation.

Department of Northern Affairs and National Resources.—The Department of Northern Affairs and National Resources was established in December 1953, superseding the Department of Resources and Development. In addition to the Administration Branch, which includes common service functions, the Department is divided into four branches: the National Parks Branch, which administers the National Parks and National Historic Parks of Canada, National Historic Sites, and wildlife matters coming within the jurisdiction of the Federal Government; the Water Resources Branch, which is responsible for the investigation of water power resources, for the administration of federal assistance to the provinces under the Canada Water Conservation Assistance Act and for federal interest in certain joint federal-provincial construction projects; the Northern Administration Branch, which is responsible for the administration of various federal Acts, territorial ordinances and regulations pertaining to the government of the Northwest Territories, for the conduct of certain business arising from the general administration of the Yukon Territory, for the administration of natural resources in those Territories and for Eskimo affairs, as well as for certain other lands and mineral rights vested in the Crown in the right of Canada; and the National Museum of Canada, which is responsible for research, publication of scientific studies, and public exhibitions in the natural history and human history fields, as well as the National Aviation Museum and the Canadian War Museum.

The Minister of Northern Affairs and National Resources is also responsible to Parliament for the Northern Canada Power Commission and the National Battlefields Commission. The Historic Sites and Monuments Board of Canada, an honorary body of recognized historians representing the various provinces, and the Advisory Committee on Northern Development and Water Use Policy, act in an advisory capacity to the Minister in their respective fields. The Deputy Minister is Commissioner of the Northwest Territories and Chairman of the Northern Canada Power Commission.

Post Office Department.—Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1952, c. 212) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of money order and savings bank business.

Privy Council Office.—For administrative purposes, the Privy Council Office is regarded as a Department of Government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sects. 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the government of Canada to be styled the Queen's Privy Council for Canada. In 1940, upon the wartime development of cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and first Secretary to the Cabinet. Since 1946, the Privy Council Office has been further re-organized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Privy Council Section concerned with the examination of submissions to the Governor in Council, preparation of draft orders and regulations, circulation and filing of approved orders, administration of oaths of office and secrecy, and the duties of editing, registering and publication of federal statutory regulations in Part II of the *Canada Gazette*; the Cabinet Section dealing with secretarial work for the Cabinet and for Cabinet committees and interdepartmental committees, such as the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions, liaison with departments and agencies of government, and the preparation of material for the Prime Minister; and the Office of the Prime Minister organized as a Secretariat with officers responsible for general secretarial duties, the drafting of letters, the arrangement of appointments to interview the Prime Minister or for his public appearances or for the release of his statements on matters of public interest, and assisting the Prime Minister in his parliamentary duties.

Public Archives.—The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and

make available to the public a comprehensive collection of historical source material relating to the history of Canada. Major emphasis is placed on official records of the Government and the personal papers of political leaders and other prominent figures. These are supplemented by copies of many records in the British and French archives that relate to Canada, a fine map collection, a historical library, and many prints, paintings and photographs. In 1956 the Archives opened a large Records Centre, designed to provide economical accommodation for departmental records that are used relatively seldom. The building, equipped with over 50 miles of shelving, also serves as a sorting centre in which papers of long-term interest are picked out of obsolete files, and useless material is segregated for destruction.

Under the terms of the Laurier House Act (RSC 1952, c. 163) the Public Archives is responsible for the administration of Laurier House as a museum and study centre. The Dominion Archivist also administers the Government's Central Microfilm Unit, which is housed in the Records Centre.

Department of Public Printing and Stationery.—This Department, established in 1886, is responsible for supplying all requirements of printing and stationery to Parliament and departments of the Canadian Government; the cataloguing, distribution and sale of government publications; the publication of the *Canada Gazette* and all departmental reports, papers, etc., required to be published by authority of the Governor General in Council (RSC 1952, c. 226); and the publication of the Statutes of Canada (RSC 1952, c. 230).

The Department of Public Printing and Stationery is under the jurisdiction of the Secretary of State. The Deputy Head is the Queen's Printer and Controller of Stationery.

Department of Public Works.—The Department was constituted in 1867 and operates under the legislative authority of the Public Works Act and other Acts of Parliament. It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads and bridges and the undertaking of dredging and navigable waters protection work. Federal Government interest in the Trans-Canada Highway is also handled by the Department. The Department maintains district offices at key points across the country. The Branches and Divisions of the Department are: Harbours and Rivers Engineering, Building Construction, Development Engineering, Property and Building Management, Purchasing and Stores, Administrative Services, Economic Studies, Financial Services, Fire Prevention, Information Services, Legal Services and Personnel.

The Minister of Public Works is also responsible to Parliament for the National Capital Commission.

Royal Canadian Mounted Police.—The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North West Mounted Police. It now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with certain provincial governments, it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. The Force is controlled and administered by the Minister of Justice.

Department of the Secretary of State.—The Secretary of State and Registrar General of Canada is the official medium of communication with the Throne through the Governor General, and is the custodian of the Great Seal of Canada and of the Privy Seal of the Governor General. He is responsible for the preparation and tabling of returns in Parliament. He administers legislation relating to patents of invention, trade marks, industrial designs, timber marking, copyright, companies, boards of trade, the registration of trade unions, public officers, public documents and governmental and parliamentary translations. He is also the Custodian of Enemy Property.

The Secretary of State has certain responsibilities with respect to civilian decorations, precedence and ceremonial. The Committee on the use of Parliament Hill and the National War Memorial falls within his purview. He is the Minister of the Department of Public Printing and Stationery and the spokesman in Cabinet and Parliament for the Civil Service Commission, the Chief Electoral Officer, the Canadian Broadcasting Corporation, the Board of Broadcast Governors, the Atlantic Development Board, the National Film Board, the National Gallery, the National Library and the Public Archives.

Tariff Board.—Constituted in 1931 under the Tariff Board Act (SC 1931, c. 55), the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, as amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from duties of customs or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise Division, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal on questions of law to the Exchequer Court of Canada.

Tax Appeal Board.—The Tax Appeal Board (created in 1946 as the Income Tax Appeal Board) now operates under the Income Tax Act (RSC 1952, c. 148 as amended). The Board is declared by Statute to be a court of record and has jurisdiction to hear and determine appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estates Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal from that court to the Supreme Court of Canada. The Board consists of a chairman and five other members. Its offices are located at Ottawa and it hears appeals at the principal centres throughout Canada approximately twice a year and at the main centres, such as Montreal and Toronto, six times a year. The Board is under the jurisdiction of the Minister of National Revenue but is completely separate and independent of the Department of National Revenue.

Department of Trade and Commerce.—The Department of Trade and Commerce was established by Act of Parliament on June 23, 1887, but did not function until Dec. 5, 1892, when an Order in Council to this effect was passed. Before the formation of the Department, assistance in the development of Canada's external trade was provided by eight Canadian Commercial Agents—five in the West Indies, two in Great Britain and one in France—who served on a part-time basis and were responsible to the Minister of Finance. A Canadian Commercial Agent was appointed at Sydney, Australia, in 1895, as the first full-time salaried agent of the Department.

The framework of the present Trade Commissioner Service emerged during the next decade or so, the Commercial Agents gradually giving place to career Trade Commissioners. There are now 173 Trade Commissioners serving at Headquarters and abroad in 63 posts (including Assistant Trade Commissioners and agricultural, fisheries and timber specialists). Where a Trade Commissioner is a member of a mission maintained by the Department of External Affairs, he holds diplomatic status and is known as a Minister (Commercial), Commercial Counsellor or Commercial Secretary.

The Department provides a wide range of services to Canadian business men through the Agriculture and Fisheries Branch, the Canadian Government Exhibition Commission, the Canadian Government Travel Bureau, the Commodities Branch, the Trade Services Branch, the International Trade Relations Branch, the Trade Commissioner Service, the Trade Fairs and Missions Branch and the Trade Publicity Branch. The Domestic Commerce Service of the Department assists business men through the facilities provided by the Industrial Promotion Branch, the National Design Branch, the Small Business Branch and the Standards Branch. These four Branches are concerned primarily with co-operating with industry in fostering greater industrial activity in Canada.

The following boards, commissions, Crown corporations and agencies report to Parliament through the Minister of Trade and Commerce: the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the National Design Council, the National Energy Board, the Canadian Wheat Board, the Northern Ontario Pipe Line Crown Corporation, the Northern Transportation Company Limited, Eldorado Aviation Limited and Eldorado Mining and Refining Limited. The National Productivity Council reports through the Ministers of Trade and Commerce and of Labour.

Department of Transport.—The Department was created on Nov. 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of two main Services—Marine and Air. Marine Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection, floating equipment, and direct supervision over 300 public harbours; 11 other harbours come under supervision of the Department but are administered by commissions. Air Services cover the operation of civil aviation, meteorological and telecommunications branches. The latter includes the administration and regulation of radar, radio marine and radio aeronautical aids to navigation and of communication by wire and by government telegraph and telephone.

Other services of the Department are in connection with the Government-owned companies: the Canadian National Railways, Canadian Government Railways, the Prince Edward Island, Newfoundland, and Yarmouth-Bar Harbour ferry services, and Trans-Canada Air Lines.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: the Air Transport Board, Board of Transport Commissioners, the Canadian Maritime Commission, the National Harbours Board, the Park Steamship Company Limited, the St. Lawrence Seaway Authority, and the Canadian Overseas Telecommunication Corporation.

Treasury Board.—The Treasury Board was first established by Order in Council PC 3 of July 2, 1867 and was made statutory in 1869. Its powers and duties are now governed by the Financial Administration Act (RSC 1952, c. 116 as amended). Serving as a committee of the Queen's Privy Council for Canada and consisting of the Minister of Finance as Chairman and five other members

of the Privy Council, it deals with all matters relating to finance, revenues, estimates, expenditures and financial commitments, accounts and personnel establishments, referred to the Board by the Governor in Council or on which the Board considers it necessary to act under the Financial Administration Act or any other Act. The practice of having a Board of Ministers co-ordinating financial measures and reviewing constantly the Government's spending program is unique.

The administrative staff of the Treasury Board constitutes a main division of the Department of Finance and is directed by an Assistant Deputy Minister of Finance named to be the Secretary of the Treasury Board.

Department of Veterans Affairs.—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board established by the War Veterans Allowance Act (RSC 1952, c. 340) also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of urban centres. It also maintains, in large cities across Canada, administrative offices, which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

War Veterans Allowance Board.—This Board, established under the authority of the War Veterans Allowance Act, 1930 (RSC 1952, c. 340), is a statutory body responsible to the Minister of Veterans Affairs for the administration of the Act and for the administration of Part XI of the Civilian War Pensions and Allowances Act, relating to certain groups of civilians who performed meritorious service in either World War I or II. It consists of three to ten members (three to five permanent, up to three temporary, and up to two additional without pay) appointed by the Governor in Council. Its functions include the responsibility of ensuring that all 19 District Authorities located in various regions throughout Canada interpret the legislation in a fair, reasonable and equitable manner. It is also an appeal body and may consider an appeal of an appellant against the decision of a District Authority.

Section 3.—Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purposes and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown

corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation—departmental, agency and proprietary.

Departmental Corporations.—A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. Ten departmental corporations are listed in Schedule B to the Act:—

Agricultural Stabilization Board (formerly Agricultural Prices Support Board)
Atomic Energy Control Board
Canadian Maritime Commission
Director of Soldier Settlement
The Director, The Veterans' Land Act
Dominion Coal Board
Fisheries Prices Support Board
National Gallery of Canada
National Research Council
Unemployment Insurance Commission.

Agency Corporations.—An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule C to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:—

Atomic Energy of Canada Limited
Canadian Arsenals Limited
Canadian Commercial Corporation
Canadian National (West Indies) Steamships Limited
Canadian Patents and Development Limited
Crown Assets Disposal Corporation
Defence Construction (1951) Limited
National Battlefields Commission
National Capital Commission (formerly Federal District Commission)
National Harbours Board
Northern Canada Power Commission (formerly Northwest Territories Power Commission)
Park Steamship Company Limited.

Two corporations, Canadian Sugar Stabilization Corporation Limited and Commodity Prices Stabilization Corporation Limited, listed in Schedule C when the Financial Administration Act was proclaimed, have since discontinued operations and surrendered

* Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation as is also the Eastern Rockies Forest Conservation Board, a joint federal-provincial enterprise. Though not included in the Schedules to the Financial Administration Act, certain provisions of the Act apply to the Northern Ontario Pipe Line Crown Corporation, set up on June 7, 1956 to oversee the building of a cross-country natural gas pipeline. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act; the same situation applies to the National Productivity Council set up under the National Productivity Act (assented to Dec. 20, 1960) and the Atlantic Development Board set up under the Atlantic Development Board Act (assented to Dec. 20, 1962).

their charters. By an Order in Council of June 15, 1955, the name of the Northwest Territories Power Commission (now Northern Canada Power Commission) was deleted from Schedule D and added to Schedule C, effective Apr. 1, 1954.

Proprietary Corporations.—A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act or have been subsequently added to that Schedule by the Governor in Council:—

- Canadian Broadcasting Corporation
- Canadian Overseas Telecommunication Corporation
- Central Mortgage and Housing Corporation
- Eldorado Aviation Limited
- Eldorado Mining and Refining Limited
- Export Credits Insurance Corporation
- Farm Credit Corporation (formerly Canadian Farm Loan Board)
- National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933
- Northern Transportation Company Limited
- Polymer Corporation Limited
- St. Lawrence Seaway Authority
- Cornwall International Bridge Company Limited (subsidiary to the St. Lawrence Seaway Authority)
- Trans-Canada Air Lines.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establishment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings. Under a special financing arrangement, a 15-p.c. excise tax charged on radio and television sets and their parts and accessories was allocated to the revenue of the Canadian Broadcasting Corporation, but this was discontinued under the provisions of the Broadcasting Act, which came into force on Nov. 10, 1958, and since that time the Corporation has received federal financing solely by parliamentary grants.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

Agricultural Stabilization Board.—The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act, which has replaced the Agricultural Prices Support Act. The Board reports to Parliament through the Minister of Agriculture.

Atlantic Development Board.—The Act establishing this Board (SC 1962-63, c. 10) received Royal Assent on Dec. 20, 1962. The Board is composed of a chairman and four other members appointed by Order in Council and reports to Parliament through the Secretary of State. Its functions are to inquire into and report upon measures and projects for fostering the economic growth and development of the Atlantic Region of Canada and to assess and make recommendations with respect to particular projects referred to it by the Minister.

Atomic Energy Control Board.—By Act of Parliament (RSC 1952, c. 11) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

Atomic Energy of Canada Limited.—This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities of the company are (a) the development of economic nuclear power, (b) scientific research and development in the atomic energy field, (c) the operation of nuclear reactors and (d) the production of radioactive isotopes and associated equipment such as Cobalt-60 beam therapy units for the treatment of cancer. The company reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

Bank of Canada.—Legislation of 1934 (RSC 1952, c. 13) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors appointed by the Government and composed of a Governor, a Deputy Governor and 12 Directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 115.)

The Canada Council.—Established by Order in Council dated Apr. 15, 1957, this corporation of 21 members, a Director and an Associate Director operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of the Council is to encourage the arts, humanities and social sciences in Canada; its work is financed by a \$50,000,000 University Capital Grants Fund and the earnings from a \$50,000,000 Endowment Fund. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the Chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Prime Minister. (See footnote, p. 115.)

Canadian Arsenals Limited.—This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945 and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plant and equipment. Among the items it now manufactures are propellants and explosives, small arms, radar equipment, optical and electronic instruments, and a wide variety of ammunition and components. Its divisions, together with the locations of their plants, are as follows: Dominion Arsenal Division (Quebec and Val Rose, Que.); Explosives Division (Valleyfield, Que.); Filling Division (St. Paul l'Ermite, Que.); Gun Ammunition Division (Lindsay, Ont.); Small Arms Division (Long Branch, Ont.); Instrument and Electronic Division (Scarborough, Ont.). The company is responsible to Parliament through the Minister of Defence Production.

Canadian Broadcasting Corporation.—The new Broadcasting Act, 1958 continues the CBC as a Crown corporation for the purpose of operating a national broadcasting service. It has the authority to maintain and operate broadcasting stations and networks and to originate and secure programs from within and outside Canada. This national radio and television service is financed through annual grants from Parliament and revenues from commercial operations.

The Corporation consists of a board of 11 Directors appointed by the Governor in Council and chosen to give representation to the principal geographical divisions of the country. The Corporation reports to Parliament through a Minister of the Crown (at present the Secretary of State).

The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors, including a Chairman and Vice Chairman, are appointed for periods of three years and may serve two consecutive terms. The President is the chief executive of the Corporation and, with the Vice President, is responsible to the Board of Directors for the conduct of the affairs of the Corporation. As the chief executive, the President receives, interprets and applies the policies and directives of the Board of Directors and establishes administrative and operating policies to control the activities of all operating units—English Networks, French Networks and Regional Broadcasting (headed by General Managers) and the International Service (headed by a Director) and of corporate staff departments, i.e., Programming, Personnel and Operations, Corporate Affairs (headed by Vice Presidents), Engineering and Technical Services, and Finance (headed by a Director and a Comptroller).

In practice, a general division of work between the President and the Vice President has been arranged whereby the attention of the President is primarily directed at the broader operating and administrative policy fields including reporting on activities to the Board of Directors and the conduct of relations with Parliament, the Board of Broadcast Governors and the public. The Vice President assists the President in his role of chief executive by assuming primary responsibility for the current operations of the Corporation.

The Corporation's Head Office is situated in Ottawa with Headquarters for English Networks in Toronto, for French Networks in Montreal and with Regional Headquarters in St. John's for Newfoundland, Halifax for the Maritime Provinces, Winnipeg for the Prairie Provinces, and Vancouver for British Columbia. Headquarters for the Northern and Armed Forces Services is in Ottawa and for the International Service in Montreal.

Canadian Commercial Corporation.—This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952, c. 35). It purchases goods and commodities in Canada for the governments of other countries. It also acts as their Canadian agent for international agencies such as the United Nations International Children's Emergency Fund and the United Nations Korean Reconstruction Agency. Other functions include arranging production and shipment of Canadian contributions of military stores to NATO countries. The Corporation also serves other departments of the Government of Canada. For instance, it arranges for the purchase and production of supplies and services which the External Aid Office is making available to other countries under the Colombo Plan. In carrying out its functions the Corporation works closely with the Department of Defence Production. It is responsible to Parliament through the Minister of Defence Production.

Canadian Maritime Commission.—This Commission was created in 1947 by the Canadian Maritime Commission Act (RSC 1952, c. 38). It considers and recommends policies and measures necessary for the operation, maintenance, manning and development of a merchant marine and a shipbuilding and ship-repairing industry. The Commission administers the Ship Construction Assistance Regulations established by Order in Council P.C. 1961-1290 passed Sept. 8, 1961 and the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43). It also administers steamship subsidies voted by Parliament. Other functions include advice to other government departments on their shipbuilding requirements, consultation with the Department of National Revenue in the administration of the laws relating to the coasting trade of Canada and the co-ordination of the overseas movement of men and material for the Department of National Defence. It has responsibility in international matters relating to merchant shipping, such as NATO, IMCO and other international bodies. The Chairman has the status of a Deputy Minister and the Commission reports to Parliament through the Minister of Transport.

Canadian National Railways.—The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949, the Temiscouata Railway in 1950, and the Hudson Bay Railway and the Northwest Communication System in 1958. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a Chairman and Board of Directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation.—This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Transport.

Canadian Patents and Development Limited.—Canadian Patents and Development Limited is a Crown corporation established in 1948, pursuant to authority granted in an amendment to

the Research Council Act which was passed in 1946. The primary purpose of the company is to make available to industry, through licensing arrangements, new processes developed by scientific workers of the National Research Council. Its services are equally available to government departments, publicly supported institutions and universities. The company also has cross-agency arrangements with similar government agencies in other Commonwealth countries. The Board of Directors is composed of representatives from the National Research Council, from government departments and from industry and the universities. Any profits that the company may derive from licensing arrangements are available for further research and development. The Corporation reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

Canadian Wheat Board.—The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 115). It reports to Parliament through the Minister of Trade and Commerce.

Central Mortgage and Housing Corporation.—This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953-54 c. 23, as amended by 1956 c. 9, 1957-58 c. 18, 1958 c. 3, 1959 c. 6, 1960 c. 10, and 1960-61 cc. 1 and 61), the Corporation insures mortgage loans made by approved lenders for home ownership and rental housing; insures home improvement loans made by banks; makes direct loans to individual home-owners, to municipalities for construction of sewage treatment projects designed to eliminate pollution in water and soil and to universities for construction of student residences; undertakes jointly with provincial governments the assembly of land and construction of housing projects; provides financial assistance for studies to identify urban areas with blighted and substandard housing; assists municipalities in clearance and rehabilitation of substandard areas; conducts housing research; encourages community planning and owns and manages rental housing units built for war workers and veterans. The Corporation also arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. The Corporation is responsible to Parliament through the Minister of National Revenue.

Crown Assets Disposal Corporation.—This Corporation is established under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). In June 1944, War Assets Corporation was established by statute to replace War Assets Corporation Limited which had been incorporated in 1943. In 1949 the name of War Assets Corporation was changed to Crown Assets Disposal Corporation. The Corporation's function is to dispose of surplus Crown assets. It is responsible to Parliament through the Minister of Defence Production.

Defence Construction (1951) Limited.—This company was established by Letters Patent in 1951 to take over the general undertakings of Defence Construction Limited. It is primarily responsible for the calling and review of tenders for all major construction jobs and for the supervision of work in the field. This covers five broad phases or types of work in the following categories: (1) defence projects in Canada for the Department of National Defence; (2) defence projects in France for the Department of National Defence under the NATO agreement (neither (1) nor (2) include housing projects or airfield runways); (3) maintenance and repair contracts at Department of National Defence sites throughout Canada; (4) defence construction for the United States Government in Canada; (5) advice and assistance concerning capital assistance projects of the Department of Defence Production and projects for the External Aid Office of the Department of External Affairs. It is responsible to Parliament through the Minister of Defence Production.

Director of Soldier Settlement and Director of the Veterans' Land Act.—The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Coal Board.—The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The Chairman has the status of a Deputy Minister and the Board reports to Parliament through the Minister of Mines and Technical Surveys. The Board administers transportation and other subventions relating to coal, including those under the Atlantic Provinces Power Development Act (SC 1957-58,

c. 25). It also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended). The Dominion Coal Board Act makes provision for the regulation and control of the production, distribution and use of fuel in times of national emergency.

Eastern Rockies Forest Conservation Board.—The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the major tributaries of the Saskatchewan River. The function of the Board is to determine the policy necessary to obtain the greatest possible flow of water in the Saskatchewan River system. The planning of programs of forest use and conservation is a joint duty of the Board and the provincial Forest Service; the administration of the conservation area is a function of the province. In April 1962, a Technical Co-ordinating Committee for Watershed Research was established to undertake study of the related needs defined by the Board. The Committee's programs, undertaken by seven co-operating agencies of the federal and Alberta governments, are co-ordinated by the Department of Forestry.

Funds for capital expenditures during the first seven years of the agreement were provided by the Federal Government with maintenance expenditures being paid by the Province of Alberta. In 1955 the province undertook the responsibility of financing both capital improvements and maintenance work. Currently, one member of the three-man Board is appointed by the Federal Government and the province has the right to appoint two members. The choice of one of the three members as Board chairman is vested in the province. The Board reports to Parliament through the Minister of Forestry. (See footnote, p. 115.)

Eldorado Aviation Limited.—This company was incorporated Apr. 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Trade and Commerce.

Eldorado Mining and Refining Limited.—Set up in 1944 under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted from the name in June 1952), the company's business is the mining and refining of uranium and the production of nuclear fuels in Canada. The company has also entered into contracts for the purchase of uranium concentrates from private producers in Canada. It reports to Parliament through the Minister of Trade and Commerce.

Export Credits Insurance Corporation.—This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors (including the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporters against non-payment by foreign buyers arising out of credit and political risks involved in foreign trade. The Corporation is also authorized to provide financing in respect of an export transaction involving extended credit terms. It reports to Parliament through the Minister of Trade and Commerce.

Farm Credit Corporation.—This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporation is responsible to Parliament through the Minister of Agriculture.

Fisheries Prices Support Board.—The Board was set up in July 1947 (RSC 1952, c. 120) to recommend to the Government price support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fishery products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

Industrial Development Bank.—The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to provide loans to industrial enterprises where financing is not available through recognized lending organizations. (See footnote, p. 115.)

National Battlefields Commission.—This Commission was established by Act of Parliament in 1908 to preserve the historic battlefields at Quebec City. The Commission is composed of nine members, seven being appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by an annual statutory grant from the Federal Government and is responsible to Parliament through the Minister of Northern Affairs and National Resources.

National Capital Commission.—This Commission is a Crown agency created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federal District Commission.

The Commission is served by a full-time paid chairman and comprises a total of twenty members representative of the ten provinces of Canada. There is a staff of seven officials reporting to a general manager, and a permanent work force of about 600.

Co-ordination and development of public lands in the National Capital Region are undertaken by direct planning and construction by the Commission's staff; by co-operation with municipalities; by provision of planning aid or financial assistance in municipal projects; and by advising the Department of Public Works on the siting and appearance of all Federal Government buildings in the 1,800-sq. mile National Capital Region. The Commission reports to Parliament through the Minister of Public Works.

National Gallery of Canada.—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy. One of the three tasks he assigned to that institution was the establishment of a National Gallery at the seat of government.

By Act of Parliament in 1913, re-enacted in 1951, the National Gallery was placed under the management of a Board of Trustees appointed by the Governor General in Council and now operates under the National Gallery Act (RSC 1952, c. 186). It is responsible to Parliament through the Secretary of State.

The first charge of the National Gallery is the development and care of the national art collections. Through its Exhibition Extension Service, travelling exhibitions, educational services such as lectures and art films, guided tours of the National Gallery collections in Ottawa and other services to the general public are controlled. In addition, the National Gallery publishes art publications and reproductions which are distributed by the Queen's Printer.

National Harbours Board.—The Board was established by Act of Parliament in 1936. It is responsible for the administration of port facilities at the harbours of Halifax, N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois Rivières and Montreal, Que.; Vancouver, B.C.; and Churchill, Man.; the Jacques Cartier and Champlain Bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

National Productivity Council.—Established by Act of Parliament (SC 1960, c. 4), the Council operates under the terms of the National Productivity Council Act assented to Dec. 20, 1960. The Council consists of 25 members, one of whom is designated Chairman, and includes five members from industry and commerce, five from organized labour, five from agriculture and primary industry, five from the general public, four officers or employees of Her Majesty, and an Executive Director.

The function of the Council is to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity and in particular to foster and promote (1) the development of improved production and distribution methods; (2) the development of improved management techniques; (3) the maintenance of good human relations in industry; (4) the use of training programs; (5) the use of re-training programs; (6) the extension of industrial research programs; and (7) the dissemination of technical information. The proceedings of the Council, which is not an agent of Her Majesty, are reported to Parliament each year through the Ministers of Trade and Commerce and Labour. (See footnote, p. 115.)

National Research Council.—This is an agency of the Canadian Government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support to research carried out in Canadian universities and industries; sponsors Associate Committees co-ordinating research on specific problems of national interest; and develops and maintains the nation's primary physical standards. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited (see p. 118). The National Research Council consists of a President, three Vice Presidents, and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the Research Council Act (RSC 1952, c. 239, as amended), and reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Defence Production).

Northern Canada Power Commission.—The Commission was established by Act of Parliament in 1948 to provide electric power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give authority to the Commission to provide similar services in Yukon Territory. The name of the Commission, formerly Northwest Territories Power Commission, was changed in 1956. The Commission is composed of a chairman and two members appointed by the Governor in Council.

The Commission operates four hydro-electric plants, two of which are located in the Northwest Territories on the Snare River near Yellowknife, and two in the Yukon Territory on the Yukon River at Whitehorse and on the Mayo River near Mayo, and diesel electric plants at Fort Smith, Fort Simpson, Fort Resolution, Aklavik and Frobisher Bay, N.W.T., and Field, B.C., and a diesel power and central heating plant and water supply and sewerage systems at Inuvik, N.W.T.; the Commission also operates, on behalf of the Department of Northern Affairs and National Resources, a small diesel electric and heating plant at Fort McPherson, N.W.T., and a central heating plant and domestic water supply system at Fort Simpson, N.W.T.

The Minister of Northern Affairs and National Resources reports to Parliament for the Commission.

Northern Ontario Pipe Line Crown Corporation.—This Corporation was established by the Northern Ontario Pipe Line Crown Corporation Act (SC 1956, c. 10) for the purpose of constructing the northern Ontario section of the all-Canadian natural gas pipeline and of leasing, with an option to purchase, this section to Trans-Canada Pipe Lines Limited. The northern Ontario section, which extends from the Manitoba-Ontario border to the vicinity of Kapuskasing, Ont., was completed on Oct. 22, 1958 and is now under lease to Trans-Canada Pipe Lines Limited. The Corporation is responsible to Parliament through the Minister of Trade and Commerce. (See footnote, p. 115.)

Northern Transportation Company Limited.—This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed. The Company is responsible to Parliament through the Minister of Trade and Commerce.

Park Steamship Company Limited.—After World War II this Company acted as an agent for Crown Assets Disposal Corporation in the sale and delivery to purchasers of government war-built ships. This work is completed but the Company remains available to carry out any appropriate duties. It has no staff of its own, any necessary work being done by the staff of the Canadian Maritime Commission (see p. 115). The Company reports to Parliament through the Minister of Transport.

Polymer Corporation Limited.—This Corporation was established in 1942 by Letters Patent under the Companies Act and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial Administration Act (RSC 1952, c. 116). It was set up to construct and operate a synthetic rubber plant which now produces a variety of synthetic rubber products and some chemicals. The Corporation's principal plant is located at Sarnia, Ont., with specialty rubber and butyl plants in France and Belgium, respectively. The Corporation is responsible to Parliament through the Minister of Defence Production.

St. Lawrence Seaway Authority.—The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Authority is composed of a President and a Vice President and reports to Parliament through the Minister of Transport.

Trans-Canada Air Lines.—TCA came into being by Act of Parliament in 1937 (RSC 1952, c. 268) to provide for the development of a publicly owned scheduled transcontinental air service. Transatlantic air services were inaugurated by TCA on behalf of the Canadian Government during World War II and scheduled operations were commenced at the end of the War. TCA now maintains passenger, mail and commodity traffic services over nation-wide routes and also services to the United States, England, Scotland, Ireland, France, Switzerland, West Germany, Austria, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. TCA is responsible to Parliament through the Minister of Transport.

Unemployment Insurance Commission.—The Commission was appointed on Sept. 24, 1940 under the provisions of the Unemployment Insurance Act, 1940 (RSC 1952, c. 273) for the purpose of administering the Act and providing a National Employment Service. It is composed of three Commissioners appointed by the Governor in Council, of whom one is designated Chief Commissioner. One Commissioner, other than the Chief Commissioner, is appointed after consultation with organizations representative of workers and the other after consultation with organizations representative of employers. The Chief Commissioner is appointed to hold office for a period of ten years and each of the other Commissioners to hold office for a period not exceeding ten years. The Commission is responsible to Parliament through the Minister of Labour.

Section 4.—Acts Administered by Federal Departments*

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

NOTE.—Copies of individual Acts of Parliament and amendments may be obtained from the Queen's Printer, Ottawa, at prices of from 10 cents to \$1.50 per copy according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered under the Departments given.

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Agriculture— RSC 1952	4 Agricultural Products Board 5 Agricultural Products Co-operative Marketing 6 Agricultural Products Marketing 9 Animal Contagious Diseases 22, 305 Canada Dairy Products 25, 308 Canada Grain 44 Canadian Wheat Board 47 Cheese and Cheese Factory Improvement 52, 313 Cold Storage 60 Department of Agriculture 61 Destructive Insect and Pest 101 Experimental Farm Stations 113 Feeding Stuffs 115 Fertilizers 126 Fruit, Vegetables and Honey 141 Hay and Straw Inspection 155 Inspection and Sale 167 Live Stock and Live Stock Products 168 Live Stock Pedigree 172 Maple Products Industry 175 Maritime Marshland Rehabilitation 177 Meat and Canned Foods 180 Milk Test 209 Pest Control Products 213 Prairie Farm Assistance 214 Prairie Farm Rehabilitation 248 Seeds 294 Wheat Co-operative Marketing 1955 27 Canada Agricultural Products Standards 36 Meat Inspection 1957-58 22 Agricultural Stabilization 1959 43 Farm Credit 44 Humane Slaughter of Food Animals 52 Crop Insurance 1960-61 30 Agricultural Rehabilitation and Development Financial Administration	Defence Production— RSC 1952 35 62 260 External Affairs— 1911 28 1948 71 RSC 1952 50 68 122 142 218 219 275 1953-54 54 Finance— RSC 1952 12 13 15 19 82 110 116 131 151, 326 156 182 183 204 221 232 245 261, 336 278 296 315 1952-53 47 1953-54 28 1955 31 46	Canadian Commercial Corporation Defence Production Surplus Crown Assets Respecting the International Boundary Waters Treaty and the existence of the International Joint Commission (amended 1914, c. 5, and 1922, c. 43) Carrying into effect the Treaties of Peace between Canada and Italy, Rumania, Hungary and Finland Carrying into effect the Treaty of Peace between Canada and Japan Department of External Affairs Food and Agriculture Organization of the United Nations High Commissioner of the United Kingdom Privileges and Immunities (NATO) Privileges and Immunities (UN) United Nations Diplomatic Immunities (Commonwealth Countries) Appropriation (Annual) Canadian National Railways Financing and Guarantee (Annual) Bank 13 Bank of Canada 15 Bills of Exchange 19 Bretton Woods Agreements 82 Diplomatic Service (Special) Superannuation 110 Farm Improvement Loans 116 Financial Administration 131 Gold Export 151, 326 Industrial Development Bank 156 Interest 182 Municipal Grants 183 Municipal Improvements Assistance 204 Pawnbrokers 221 Provincial Subsidies 232 Quebec Savings Banks 245 Satisfied Securities 261, 336 Tariff Board 278 Veterans Business and Professional Loans 296 Winding-up 315 Currency, Mint and Exchange Fund 1952-53 47 Public Service Superannuation 1953-54 28 Fire Losses Replacement Account 1955 31 Canadian National Railways Refunding 46 Fisheries Improvement Loans
Auditor General— RSC 1952 116			
Citizenship and Immigration— 1924 48 1927 37 1934 29 1943 19 RSC 1952 33 67 146 149 325	Indian Reserve Lands in Ontario St. Regis Indian Reservation Caughnawaga Indian Reserve British Columbia Indian Reserves Mineral Resources Canadian Citizenship Department of Citizenship and Immigration Immigration Aid Societies Indian Immigration		
Civil Service Commission— 1960-61 57	Civil Service		

* Compiled from information supplied by the respective Departments.

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Finance—concluded		Justice—concluded	
1956 1	Prairie Grain Producers Interim Financing	RSC 1952 160	Juvenile Delinquents
2	Temporary Wheat Reserves	171	Lord's Day
29	Federal-Provincial Tax Sharing Arrangements	198	Official Secrets
1957-58 26	Beechwood Power Project	210	Petition of Right
1959 32	Public Service Pension Adjustment	217, 333	Prisons and Reformatories
1960 1	Prairie Grain Loans	234	Railway
32	International Development Association	253	Solicitor General
1960-61 5	Small Business Loans	266	Tobacco Restraint
		259, 335	Supreme Court
		299	Yukon Administration of Justice
		307	Canada Evidence
		314	Combines Investigation
		322	Extradition
		1952-53 530	Crown Liability
		1953-54 51	Criminal Code
		1958 38	Parole
		1959 34	Royal Canadian Mounted Police Superannuation
		54	Royal Canadian Mounted Police
		1960 44	Canadian Bill of Rights
		1960-61 53	Penitentiary
Fisheries—		Labour—	
RSC 1952 61	Deep Sea Fisheries	RSC 1927 110	Conciliation and Labour
69	Department of Fisheries	RSC 1952 72	Department of Labour
118	Fish Inspection	108	Fair Wages and Hours of Labour
119	Fisheries	132	Government Annuities
120	Fisheries Prices Support	134, 323	Government Employees Compensation
121	Fisheries Research Board	152	Industrial Relations and Disputes Investigation
177	Meat and Canned Foods	178	Merchant Seamen Compensation
194	Northern Pacific Halibut Fishery (Convention)	236	Reinstatement in Civil Employment
244	Salt Fish Board	295	White Phosphorous Matches
293	Whaling Convention	1952-53 19	Canada Fair Employment Practices
1952-53 15	Coastal Fisheries Protection	1955 50	Unemployment Insurance
44	North Pacific Fisheries Convention	1956 38	Female Employees Equal Pay
1953-54 18	Northwest Atlantic Fisheries Convention	1957-58 24	Annual Vacations
1955 34	Great Lakes Fisheries Convention	1960-61 6	Technical and Vocational Training Assistance
1957 11	Pacific Salmon Fisheries Convention	26	Vocational Rehabilitation of Disabled Persons
31	The Pacific Fur Seals Convention		
Forestry—		Mines and Technical Surveys—	
1947 59	Eastern Rocky Mountains Forest Conservation	1951 26	Canada Lands Survey
1960 41	Department of Forestry	RSC 1952 73	Department of Mines and Technical Surveys
		95, 318	Emergency Gold Mining Assistance
		102	Explosives
Insurance—		National Defence—	
RSC 1952 31	Canadian and British Insurance Companies	RSC 1952 63	Defence Services Pension Continuation
49	Civil Service Insurance	184	National Defence
70	Department of Insurance	283	Visiting Forces (British Commonwealth)
100	Excise Tax (Part I)	284	Visiting Forces (North Atlantic Treaty)
125	Foreign Insurance Companies	1959 21	Canadian Forces Superannuation
170	Loan Companies		
251	Small Loans		
272	Trust Companies		
296	Winding-up (Part III)		
1952-53 28	Co-operative Credit Associations		
Justice—		National Health and Welfare—	
1940 43	Treachery	RSC 1952 74	Department of National Health and Welfare
RSC 1952 1	Admiralty		
14	Bankruptcy		
28	Canada Prize		
71	Department of Justice		
98	Exchequer Court		
106	Expropriation		
111	Farmers' Creditors Arrangement		
116	Financial Administration		
127	Fugitive Offenders		
144	Identification of Criminals		
154	Inquiries		
158	Interpretation		
159	Judges		

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
National Health and Welfare— concluded		National Revenue —continued	
<i>National Health—</i>		<i>Taxation—concl.</i>	
RSC 1952 29	Canada Shipping (Part V, Sick Mariners and Marine Hospitals)	1959 45	Income Tax
165	Leprosy	1960 43	
220	Proprietary or Patent Medicine	1960-61 17	
229	Public Works Health	49	
231	Quarantine	1955 10	Canada - Ireland Income Tax Agreement
1952-53 38	Food and Drugs	11	Canada - Ireland Succession Duties Agreement
1957 23	Hospital Insurance and Diagnostic Services	1956 5	Canada - Denmark Income Tax Agreement
1960-61 35	Narcotic Control	33	Canada - Germany Income Tax Agreement
<i>Welfare—</i>		1956-57 17	Canada - South Africa Death Duties Agreement
RSC 1952 17	Blind Persons	18	Canada - South Africa Income Tax Agreement
109	Family Allowances	1957 16	Canada-Netherlands Income Tax Agreement (amended 1960, c. 18)
199	Old Age Assistance	1957-58 27	Canada - Australia Income Tax Agreement
200	Old Age Security	1959 20	Canada - Finland Income Tax Agreement
1953-54 55	Disabled Persons	1960-61 19	Canada - United States of America Estate Tax Convention
1956 26	Unemployment Assistance	<i>Customs and Excise—</i>	
1958 30	Excise Tax (Sect. 47)	RSC 1952 58	Customs
1960-61 59	Fitness and Amateur Sport	60	Customs Tariff (amended by 316)
National Library—		75	Department of National Revenue
RSC 1952 330	National Library	99	Excise (amended by 319)
National Revenue—		100	Excise Tax (amended by 320)
<i>Taxation—</i>		<i>Administered in Part—</i>	
1940 32	Excess Profits Tax	RSC 1952 54	United States Treaty (smuggling)
1940-41 15		9	Aeronautics (amended by 302)
1942-43 26		2	Animal Contagious Diseases
1943-44 13		11	Atomic Energy Control
1944-45 38	Canada-U.S. Tax Convention (Income Tax)	22	Canada Dairy Products (amended by 305)
1945 19		29	Canada Shipping
1946 47		30	Canada Temperance
1947 32		44	Canadian Wheat Board
1943-44 21	Canada-U.S. Tax Convention (Succession Duties)	55	Copyright
1950 27		81	Destructive Insect and Pest
1951 5		102	Explosives
1956 35		103	Export
1944-45 31	Canada-U.K. Income Tax Agree- ment	113	Feeding Stuffs
1950 27		114	Ferries
1946 38		115	Fertilizers
39		118	Fish Inspection
1948 34	Canada-U.K. Succession Duty Agreement	119	Fisheries
40		126	Fruit, Vegetables and Honey
1950-51 40		128	Game Export
1952 18		131	Gold Export
1950-51 41	Canada-France Income Tax Con- vention	135	Government Harbours and Piers
42		145	Immigration (amended by 325)
43		147	Importation of Intoxicating Liquors
1950-51 41		155	Inspection and Sale
42	Canada-Sweden Income Tax Agreement	167	Live Stock and Live Stock Prod- ucts
89		168	Live Stock Pedigree
RSC 1952 317		169	Live Stock Shipping
1956-57 22		172	Maple Products Industry
1958 29	Estate Tax	177	Meat and Canned Foods
1960 29		187	National Harbours Board
RSC 1952 148		193	Navigable Waters Protection
1952-53 40			
1953-54 57	Income Tax		
1955 54			
55			
1956 39			
1957 29			
1957-58 17			
1958 32			

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
National Revenue —concluded		Post Office— RSC 1952 212	Post Office
<i>Administered in Part—concl.</i>		Public Archives— RSC 1952 163 222	Laurier House Public Archives
RSC 1952 194	Northern Pacific Halibut Fishery (Convention)		
209	Pest Control Products		
212	Post Office		
215	Precious Metals Marking		
220	Proprietary or Patent Medicine		
231	Quarantine		
233	Radio		
248	Seeds		
271	Transport		
292	Weights and Measures		
295	White Phosphorous Matches		
1952-53 15	Coastal Fisheries Protection		
38	Food and Drugs		
1953-54 27	Export and Import Permits		
51	Criminal Code		
1955 27	Canada Agricultural Products Standards		
36	Meat Inspection		
1957 31	Pacific Fur Seal Convention		
1960-61 35	Narcotic Control		
Northern Affairs and National Resources—		Public Printing and Stationery— RSC 1952 226 230	Public Printing and Stationery Publication of Statutes
1908 57, 58	National Battlefields at Quebec		
1927 51	Respecting certain debts due the Crown		
RSC 1927 87	Seed Grain		
88	Seed Grain Sureties		
116	Railway Belt		
124	Manitoba Supplementary Provi- sions		
180	Saskatchewan and Alberta Roads		
211	Railway Belt Water		
1928 32	Lac Seul Conservation		
1930 3	Alberta Natural Resources		
29	Manitoba Natural Resources		
37	Railway Belt and Peace River Block		
41	Saskatchewan Natural Resources		
1932 35	Refunds (Natural Resources)		
55	Waterton - Glacier International Peace Park		
1939 33	Rainy Lake Watershed Emergency Control		
RSC 1952 90	Dominion Water Power		
128	Game Export		
162	Land Titles		
179	Migratory Birds Convention		
189	National Parks		
192	National Wildlife Week		
196	Northern Canada Power Com- mission		
224	Public Lands Grants		
263	Territorial Lands		
300	Yukon Placer Mining		
301	Yukon Quartz Mining		
331	Northwest Territories		
1952-53 21	Canada Water Conservation As- sistance		
39	Historic Sites and Monuments		
53	Yukon		
1953-54 4	Department of Northern Affairs and National Resources		
1955 47	International River Improvements		
1957-58 25	Atlantic Provinces Power Develop- ment		
		Public Works— RSC 1952 91 114 135 138 161 163 187 193 216 228 234 289 324 1959 46	Dry Docks Subsidies Ferries Government Harbours and Piers (Sect. 5) Government Works Tolls Kingsmere Park (in part) Laurier House National Harbours Board (Sect. 38, in part) Navigable Waters Protection (Parts I and III) Prime Minister's Residence Public Works Railway (Sect. 251) Trans-Canada Highway Government Property Traffic (in part) National Energy Board (Sect. 76)
		Secretary of State— RSC 1929 55 1947 24 1948 71 RSC 1952 18 23, 306 30 53 54 55 62 77 83 87 149 195 203 208 223 225 234 235 247 263 265 267 270 295 298 307 1952-53 49	Reparation Payment Trading with the Enemy (Transi- tional Powers) Italy, Rumania, Hungary and Finland Treaties of Peace Boards of Trade Canada Elections Canada Temperance Companies Companies Creditors Arrangement Copyright Defence Production Department of State Disfranchising Dominion Controverted Elections Indian Northwest Territories Patent Pension Fund Societies Public Documents Public Officers Railway Regulations Seals Territorial Lands Timber Marking Trade Unions Translation Bureau White Phosphorous Matches Yukon Canada Evidence Trade Marks and Unfair Com- petition

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Trade and Commerce— RSC 1952	78 Department of Trade and Commerce	Transport—concl. RSC 1952	136 Government Railways
92 Electrical and Photometric Units		137 Government Vessels Discipline	
94 Electricity Inspection		157 International Rapids Power Development	
103 Export		169 Live Stock Shipping	
105 Export Credits Insurance		174 Maritime Freight Rates	
129 Gas Inspection		187 National Harbours Board	
164 Length and Mass Units		193 Navigable Waters Protection	
191 National Trade Mark and Trade Labelling		202 Passenger Tickets	
215 Precious Metals Marking		211 Pipe Lines	
257 Statistics		233 Radio	
292 Weights and Measures		234 Railway	
1953-54 27 Export and Import Permits		242 St. Lawrence Seaway Authority	
1955 14 Exportation of Power and Fluids and Importation of Gas		262 Telegraphs	
1956 10 Northern Ontario Pipe Line Crown Corporation		268 Trans-Canada Air Lines	
1959 46 National Energy Board		271 Transport (Board of Transport Commissioners)	
1960-61 4 National Productivity Council		276 United States Wreckers	
1962 24 National Design Council		291 Water Carriage of Goods	
1962 26 Corporations and Labour Unions Returns		311 Canadian National Railways Capital Revision	
		1955 15 Foreign Aircraft Third Party Damage	
Transport—		29 Canadian National Railways	
	Auditors for National Railways (Annual)	31 Canadian National Refunding	
	Canadian National Railways Financing and Guarantee (Annual)	38 Windsor Harbour Commissioners	
1907 22 Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund		34 Lakehead Harbour Commissioners	
1908 46 Meaford Harbour		19 Nanaimo Harbour Commissioners	
1911 26 Toronto Harbour Commissioners		21 Oshawa Harbour Commissioners	
1912 55 Winnipeg and St. Boniface Harbour Commissioners		26 Canadian National Toronto Terminals	
98 Hamilton Harbour Commissioners		Veterans Affairs—	
1913 158 New Westminster Harbour Commissioners		1920 54 Returned Soldiers' Insurance (as amended)	
162 North Fraser Harbour Commissioners		RSC 1927 188 Soldier Settlement (as amended)	
1922 50 Trenton Harbour		RSC 1952 8 Allied Veterans Benefits	
1927 29 Canadian National (West Indies) Steamship Company		51, 312 Civilian War Pensions and Allowances (amended 1962, c. 11) (Sects. I to X, Canadian Pension Commission); (Sect. XI, War Veterans Allowance Board)	
1929 12 Canadian National Montreal Terminals		80 Department of Veterans Affairs	
48 Northern Alberta Railways		117 Fire Fighters War Service Benefits	
1931 19, 20 Beauharnois Light, Heat and Power		207, 332 Pension (amended 1953-54, c. 62; 1957-58, c. 19; 1960-61, c. 10) (Canadian Pension Commission)	
1940 20 Beauharnois Light, Heat and Power		256 Special Operators War Service Benefits	
1947 26 Beauharnois Light, Heat and Power		258 Supervisors War Service Benefits	
42 Port Alberni Harbour Commissioners		279, 338 Veterans Insurance (amended 1958, c. 43; 1962, c. 6)	
1952 34 Belleville Harbour Commissioners		280 Veterans' Land (amended 1953-54, c. 66; 1959, c. 37; 1962, c. 29)	
RSC 1952 2, 302 Aeronautics		281 Veterans Rehabilitation (amended 1959, c. 17)	
16 Bills of Lading		289 War Service Grants (amended 1953-54, c. 46; 1959, c. 18; 1962, c. 7)	
20 Bridges		297 Women's Royal Naval Services and the South African Military Nursing Service (Benefits)	
29 Canada Shipping		340 War Veterans Allowance (amended 1955, c. 13; 1957-58, c. 7; 1960, c. 36; 1960-61, c. 39) (War Veterans Allowance Board)	
38 Canadian Maritime Commission		1952-53 27 Children of War Dead (Education Assistance) (amended 1953-54, c. 2; 1958, c. 25; 1962, c. 10)	
39 Canadian National - Canadian Pacific		1953-54 65 Veterans Benefit (amended 1955, c. 43)	
42 Canadian Overseas Telecommunication Corporation			
43 Canadian Vessel Construction Assistance			
45 Carriage by Air			
79 Department of Transport			
135 Government Harbours and Piers			

PART IV.—FEDERAL GOVERNMENT EMPLOYMENT

The Civil Service Commission.—As the central personnel agency of the Federal Government, the Civil Service Commission is the custodian of the merit system in the Civil Service of Canada. It is also concerned, however, with many other aspects of personnel administration.

The Civil Service Commission was first established in 1908 under the provisions of the Civil Service Amendment Act of that year which introduced the principle of selection by order of merit for positions in Ottawa. Prior to that, a Board of Examiners (established in 1882) held qualifying examinations for appointment to the service but it did not have the power to appoint. In 1918, the Civil Service Amendment Act was superseded by a Civil Service Act which had the effect, among other things, of bringing positions outside of Ottawa, as well as those at headquarters, under the jurisdiction of the Act and consequently the Commission. This Act served Canada and the civil service well for over four decades until with the passage of time it, too, was in need of substantial amendment. This was accomplished through a new Civil Service Act which received Royal Assent in September 1961 and which came into effect on Apr. 1, 1962.

The new Act applies to about 136,000 employees in all the departments and certain agencies of government and this constitutes the 'civil service' within the legal meaning of that term. The 'public service' is defined as those departments and agencies listed in Schedule A of the Public Service Superannuation Act which embrace about 190,000 employees including the 136,000 under the Civil Service Act. This definition of public service does not include certain Crown corporations—for example, the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation, the Canadian National Railways and the Trans-Canada Air Lines. Agencies outside the civil service make their own arrangements, in accordance with various statutes, for the selection and employment of staff.

Recruitment.—The recruitment of civil servants under the Civil Service Act is conducted by means of open competitive examinations through which every citizen has the opportunity to compete for positions in the service of his country. Examinations are held periodically as staff requirements of the civil service dictate. Ordinarily, any Canadian citizen may apply for headquarters positions at Ottawa but applicants for local positions must normally be residents of the locality in which the vacancy occurs. Competitive examinations are announced through the press and through posters displayed on the public notice boards of the larger post offices, offices of the National Employment Service, offices of the Civil Service Commission and elsewhere. The examinations may be written, oral, a demonstration of skill, or any combination of these.

The names of persons successful in civil service examinations, arranged in order of rank, are recorded on eligible lists. Examination results are formally announced by publication in the *Canada Gazette* and each candidate—successful or unsuccessful—is advised of his standing. Appointments are made as required from the eligible lists which usually remain valid for one year.

The rank of the various successful candidates on eligible lists is influenced by the veterans' preference. The preference is limited largely, in accordance with its definition by law, to members of the Armed Forces who have served overseas in World Wars I or II or in the Korean theatre of operations. The highest order of preference is the disability preference accorded to pensioners of the Armed Forces who, as a result of their war service, have been unable to resume their pre-war civilian occupations.

The operations of the Civil Service Commission are decentralized to a considerable degree and the Commission now has ten district offices and six sub-offices across the country. These offices have a significant measure of autonomy enabling them to give quick and efficient service to the field agencies of departments which comprise over three quarters of the civil service.

Each year the Civil Service Commission conducts about 10,000 competitions, receives about 180,000 applications and makes about 23,000 appointments, mainly to offset the

turnover occasioned by deaths, retirements, resignations and the other forms of attrition. One feature of its recruiting program is the annual selection of 600 or more university graduates. There are some 10,000 university graduates in the civil service and, of course, many more in agencies and corporations not under the Civil Service Act.

Promotion.—It is a prime feature of the Civil Service Act to create a career service. The result is that promotion, like entrance, is based on merit and a sound promotion system is in operation. Promotion competitions are of two kinds, inter-departmental and departmental. The former are open to employees of all departments and agencies and are conducted by the Civil Service Commission. The latter, the departmental competitions, are restricted to employees of one department or a portion of a department and are conducted by the departments themselves subject to audit and approval by the Commission. It is also provided in the Act that persons employed in the public service outside the civil service, and members of the Armed Forces and the Royal Canadian Mounted Police, may also be considered in promotion competitions where it is thought necessary to do so to attract persons with a high level of skill or ability to positions in the civil service. Each year approximately 6,000 promotion competitions are conducted and about 20,000 employees are promoted, including 5,500 reclassifications. For those employees who feel that their qualifications have not been properly assessed, appeals are conducted under the jurisdiction of the Commission.

Position Classification.—Provision is made in the Civil Service Act for the classifying of positions in the civil service. A formal system of position classification was first instituted in 1919 and positions with like duties and responsibilities were classified alike and remunerated equally. Each position has a title, a set of tasks or duties which are proper to it in the organization in which it occurs and, arising out of these duties, a set of qualifications appropriate for their performance. Positions with duties of a similar kind are grouped together under a common title to form a class and grades within the class reflect the level of responsibility. There are some 1,800 classes and grades in the civil service and the Commission is constantly reviewing them to ensure that the specifications are accurate. Position classification is a mainspring in the Commission's primary function of recruitment, involving as it does the fixing of standards of qualification for each class of position.

Salary Determination.—It is also a responsibility of the Civil Service Commission to recommend to the Governor in Council rates of pay for each class and grade in the civil service. In order that its recommendations may be soundly based, the Commission has established a Pay Research Bureau which provides objective information on compensation and working conditions for various occupations in government, business and industry. These data are studied in relation to comparable classes in the civil service and in combination with other relevant factors—such as the need to recruit and retain sufficient staff, and in the light of the relationship of one class to another—and after this process is complete a recommendation is submitted to the Governor in Council for consideration. The Governor in Council also fixes the salaries for those employees who are not under the Civil Service Act.

Organization and Methods.—In recent years there has been an increasing awareness of the extent to which economical administration depends on the adoption of modern management techniques and devices. To meet this need the Commission has created a Management Analysis Division and an Organization Division to study problems of management in collaboration with officials directly responsible for major areas of administration. These Divisions afford practical assistance to departments and other agencies of the Government through the systematic examination of structures, operations, procedures and work methods. Their facilities are offered free of charge to all departments.

Staff Training.—In 1947 the Commission set up a Staff Development and Training Division to promote and guide a systematic service-wide training scheme. The training scheme sponsored by the Commission is a joint venture undertaken in co-operation with the various departments, most of which have parallel training divisions. The Commission's Staff Development and Training Division is primarily a co-ordinating agency. It promotes and organizes training activities, trains departmental instructors in the presentation of

courses, prepares and gives certain courses of general application to all departments, publishes booklets and other training aids, assists departments in developing training to meet specialized needs and acts as a general clearing-house for the exchange of information on training matters.

Employee Relations.—The Civil Service Act confers on appropriate staff associations the right to be consulted on matters of remuneration and conditions of employment. This consultation may be initiated by either the official or staff sides and may take three forms. On questions of remuneration, which include certain allowances as well as pay, the consultation takes place between the associations and the Minister of Finance or such members of the public service as he may designate and this may, of course, include members of the Commission. On terms and conditions of employment as enumerated in Sect. 68 (1) of the Civil Service Act (which are mainly those with a fiscal effect, such as leave), the consultation takes place between the associations and the Commission and such members of the public service as the Minister of Finance may designate. On those terms and conditions of employment that come within the exclusive jurisdiction of the Commission, the consultation takes place between the associations and the Commission alone. This form of tripartite consultation was introduced on Apr. 1, 1962 when the new Civil Service Act came into force and is designed to be consistent with the distribution of authority in the Act. It is expected to introduce a more sophisticated employee-employer relationship to the federal civil service.

Statistics of Federal Government Employment.*—The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. The survey is divided into two main categories: (1) departmental branches, services and corporations, and (2) agency and proprietary corporations and other agencies. Table 1 combines the two groups; Tables 2 to 6 cover employees in the first category and Table 7 covers employees in the second category.

1.—Total Federal Government Employees, by Province, as at Mar. 31, 1962, and Earnings for the Year Ended Mar. 31, 1962

Item and Province or Territory	Departments	Departmental Corporations	Agency Corporations	Proprietary Corporations	Other Agencies	Total
	No.	No.	No.	No.	No.	No.
Employees—						
Newfoundland.....	3,905	226	—	5,062	4	9,197
Prince Edward Island.....	1,307	58	—	973	—	2,338
Nova Scotia.....	13,439	439	345	5,755	41	20,019
New Brunswick.....	6,595	583	124	7,140	15	14,457
Quebec.....	30,030	3,115	3,337	29,518	278	66,278
Ontario.....	81,269	7,523	4,677	33,962	935	128,366
Manitoba.....	9,682	674	60	14,027	604	25,047
Saskatchewan.....	6,130	441	58	4,367	28	11,024
Alberta.....	13,212	593	37	6,578	72	20,492
British Columbia.....	19,020	1,233	177	6,331	78	26,839
Yukon and Northwest Territories.....	3,383	7	150	64	—	3,604
Abroad.....	2,672	17	10	7,806	9	10,514
Totals, Employees.....	190,644	14,909	8,975	121,583	2,064	338,175
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Totals, Earnings.....	794,814	61,471	46,180	611,375	8,950	1,522,790

Departmental Branches, Services and Corporations.—The salaries of employees in this group are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, though paid an annual salary rate, are subject

* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departmental branches, services and corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in the *Estimates of Canada*, or are established by means of supplementary Treasury Board Minutes. Thus this category of employees includes persons subject to the provisions of the Civil Service Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Civil Service Act.

"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate regulations and are therefore paid on the basis of standard wage rates for similar work in the area in which the individual is employed. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are principally persons employed on a non-continuing basis.

2.—Employees in Departmental Branches, Services and Corporations of the Federal Government, by Province and Sex, as at Mar. 31, 1962

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

Province or Territory	Salaried	Pre- vailing Rate ¹	Ships' Officers and Crews	Totals ¹	Casuals and Others ²
	No.	No.	No.	No.	No.
Newfoundland.....	T. 2,871 M. 2,610 F. 361	498 419 70	204 204 —	3,573 3,133 431	558 341 35
Prince Edward Island.....	T. 764 M. 636 F. 128	328 137 15	108 108 —	1,200 881 143	165 167 8
Nova Scotia.....	T. 7,993 M. 6,090 F. 1,903	3,132 2,473 288	1,004 1,004 —	12,129 9,687 2,491	1,749 1,655 67
New Brunswick.....	T. 5,451 M. 4,345 F. 1,106	957 768 182	136 136 —	6,544 5,239 1,288	634 415 124
Quebec.....	T. 26,226 M. 20,804 F. 6,022	3,947 3,163 780	596 596 —	30,769 23,963 6,802	2,376 1,868 507
Ontario.....	T. 77,644 M. 52,997 F. 24,647	7,117 4,898 2,353	130 127 3	84,891 57,822 27,003	3,901 2,621 1,270
Manitoba.....	T. 8,057 M. 6,049 F. 2,008	1,385 863 413	11 11 —	9,453 6,923 2,421	903 663 253
Saskatchewan.....	T. 5,615 M. 4,525 F. 1,090	489 407 82	— — —	6,104 4,932 1,172	467 332 132
Alberta.....	T. 10,266 M. 7,661 F. 2,605	2,339 1,334 381	7 7 —	12,612 9,002 2,986	1,193 751 297
British Columbia.....	T. 15,353 M. 11,393 F. 3,955	2,689 1,866 557	684 684 —	18,726 13,948 4,512	1,527 1,163 225
Yukon and Northwest Territories.....	T. 1,571 M. 1,168 F. 403	878 614 98	19 19 —	2,468 1,701 501	922 265 45
Abroad.....	T. 2,532 M. 1,435 F. 1,097	— — —	— — —	2,532 1,435 1,097	157 97 60
Canada.....	T. 164,343 M. 119,018 F. 45,325	23,759¹ 16,632 5,219	2,899 2,896 3	191,001¹ 138,546 50,547	14,552² 10,228 2,943

¹ Provincial totals include employees undistributed as to sex; total for Canada 1,908. include employees undistributed as to sex; total for Canada 1,381.

² Provincial totals

3.—Employees in Departmental Branches, Services and Corporations and their Earnings, by Month, April 1961 to March 1962

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 7.

Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
EMPLOYEES AT THE END OF EACH MONTH					
	No.	No.	No.	No.	No.
April 1961.....	160,435	23,903	2,908	187,246	13,180
May.....	162,082	24,605	3,026	189,713	13,842
June.....	163,698	26,890	3,212	193,300	14,502
July.....	164,536	27,112	3,225	194,873	15,097
August.....	164,829	26,391	3,240	194,460	15,698
September.....	163,156	24,301	3,185	190,642	14,959
October.....	163,382	23,463	3,197	190,022	14,111
November.....	162,941	23,579	3,194	189,714	14,061
December.....	162,547	23,281	3,054	188,882	13,246
January 1962.....	163,719	23,837	2,888	190,444	14,733
February.....	164,084	23,641	2,847	190,572	14,995
March.....	164,843	23,759	2,899	191,001	14,552
REGULAR EARNINGS					
	\$	\$	\$	\$	\$
April 1961.....	57,255,096	6,063,703	899,467	64,218,266	3,113,198
May.....	57,659,346	6,785,703	951,466	65,396,515	3,569,435
June.....	58,213,859	7,191,385	995,949	66,401,193	3,726,537
July.....	58,685,192	7,055,012	1,033,347	66,773,551	3,736,669
August.....	58,743,740	7,294,363	1,057,215	67,095,318	4,067,244
September.....	58,424,597	6,625,919	1,044,657	66,095,173	3,918,901
October.....	58,589,948	6,476,406	1,033,139	66,099,493	3,558,265
November.....	58,556,369	6,559,731	1,024,610	66,150,710	3,352,325
December.....	58,510,246	6,443,379	947,196	65,900,821	3,331,476
January 1962.....	59,006,144	6,790,395	946,170	66,742,709	3,631,180
February.....	59,085,557	6,137,040	923,165	66,145,762	3,435,830
March.....	59,376,011	6,708,469	943,991	67,028,471	3,923,235
OVERTIME PAYMENTS REPORTED					
	\$	\$	\$	\$	\$
April 1961.....	787,801	209,492	71,020	1,068,313	68,676
May.....	810,919	304,783	117,358	1,233,060	84,142
June.....	662,075	268,494	121,119	1,051,688	105,571
July.....	604,465	259,596	107,621	971,682	176,670
August.....	475,982	241,855	138,516	851,353	185,171
September.....	456,232	254,544	158,668	869,444	177,550
October.....	674,885	241,170	137,066	1,053,121	138,543
November.....	774,798	242,131	131,991	1,148,920	108,566
December.....	1,006,443	273,283	87,241	1,366,967	100,778
January 1962.....	1,182,255	359,086	77,288	1,618,629	111,436
February.....	1,457,367 ¹	275,207	68,012	1,800,586	92,386
March.....	579,837	243,336	75,746	898,919	80,706
RETROACTIVE PAYMENTS REPORTED					
	\$	\$	\$	\$	\$
April 1961.....	2,836	95,035	29,988	127,859	32,327
May.....	2,233	54,237	43,202	99,672	27,543
June.....	6,956	92,919	752	100,627	50,357
July.....	4,060	99,668	5,113	108,841	28,416
August.....	2,307	82,483	10,531	95,321	28,596
September.....	1,728	61,720	50,325	113,773	18,477
October.....	1,615	56,866	26,642	85,123	16,347
November.....	1,658	92,182	41,255	135,095	15,673
December.....	4,364	32,075	19,372	55,811	11,426
January 1962.....	4,467	20,631	2,394	26,892	10,220
February.....	6,535	92,391	3,966	102,892	23,289
March.....	2,088,419 ²	90,552	65	2,179,036	16,307

¹ Includes Christmas overtime pay of Post Office employees.
from the salary revision effective July 1, 1961.

² Includes retroactive payments resulting

Table 4 presents metropolitan area data on staff employed in departmental branches, services and corporations. The 17 metropolitan areas listed are those defined for purposes of the 1961 Census of population. Included are employees who work within the boundaries of the metropolitan areas; those residing within those areas but working outside are excluded.

4.—Federal Employees in Metropolitan Areas, by Sex, as at Sept. 30, 1962 and Earnings for September 1962

Area	Persons Employed at Sept. 30, 1962					Regular Earnings September 1962	
	Male	Female	Undis- tributed	Total	P.C. of Grand Total	Total	P.C. of Grand Total
	No.	No.	No.	No.		\$'000	
Metropolitan Areas.....	94,459	39,157	66	133,682	66.3	48,582	69.1
Ottawa, Ont.—Hull, Que.....	29,857	17,587	5	47,449	23.5	18,821	26.8
Montreal, Que.....	14,061	4,400	—	18,461	9.2	6,281	8.9
Toronto, Ont.....	11,012	4,313	—	15,325	7.6	5,147	7.3
Halifax, N.S.....	7,237	1,722	48	9,007	4.4	3,001	4.3
Vancouver, B.C.....	6,343	2,339	5	8,687	4.3	3,154	4.5
Winnipeg, Man.....	4,536	1,689	—	6,225	3.1	2,219	3.1
Victoria, B.C.....	4,098	1,068	—	5,166	2.6	1,908	2.7
Edmonton, Alta.....	3,429	1,561	—	4,990	2.5	1,739	2.5
Quebec, Que.....	3,112	888	1	4,001	2.0	1,392	2.0
London, Ont.....	2,602	1,256	—	3,858	1.9	1,270	1.8
Calgary, Alta.....	2,215	751	—	2,966	1.5	1,031	1.5
St. John's, Nfld.....	1,960	275	7	2,242	1.1	703	1.0
Saint John, N.B.....	1,173	512	—	1,685	0.8	578	0.8
Hamilton, Ont.....	1,199	377	—	1,576	0.8	551	0.8
Windsor, Ont.....	993	181	—	1,179	0.6	442	0.6
Kitchener—Waterloo, Ont.....	399	109	—	508	0.2	190	0.3
Sudbury, Ont.....	228	129	—	357	0.2	125	0.2
Non-metropolitan Areas.....	53,245	11,555	3,064	67,864	33.7	21,732	30.9
In Canada.....	51,675	10,374	3,064	65,113	32.3	20,827	29.6
Outside Canada.....	1,570	1,181	—	2,751	1.4	895	1.3
Grand Totals.....	147,704	50,712	3,130	201,546	100.0	70,304	100.0
	p.c.	p.c.	p.c.	p.c.		p.c.	
Proportion in—							
Metropolitan Areas.....	64.0	77.2	2.1	66.3	...	69.1	...
Non-metropolitan Areas.....	36.0	22.8	97.9	33.7	...	30.9	...
In Canada.....	35.0	20.5	97.9	32.3	...	29.6	...
Outside Canada.....	1.0	2.3	—	1.4	...	1.3	...
Grand Totals.....	100.0	100.0	100.0	100.0	...	100.0	...

Table 5 presents statistics for departmental branches, services and corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly, an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

Table 6 is an administrative analysis of departmental branches, services and corporations, showing data for these bodies as they were organized at Mar. 31, 1962. Because of periodic changes in the administrative structure of the Government, comparisons over a period of years should be based on the classification by function given in Table 5. Although most salaried staffs fluctuate little during the year, the Taxation Branch of the Department of National Revenue increases its staff considerably in March and April because of the heavy flow of income tax returns during that period, the Legislation branches employ extra staff during each session of Parliament, and several departments employ considerable numbers of students in the summer months. Prevailing rate and other types of employment generally reach a peak in numbers during summer and decline to a lower level in winter.

5.—Federal Government Employees as at Mar. 31, 1962, and Regular Earnings for the Year Ended Mar. 31, 1962, classified by Function

Note.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Regular Earnings	Em- ployees	Regular Earnings	Em- ployees	Regular Earnings	Em- ployees	Regular Earnings	Em- ployees	Regular Earnings
	No.	\$	No.	\$	No.	\$	No.	\$	No.	\$
Defence Services.....	32,353	127,797,155	13,935	50,076,567	647	2,500,888	46,935	180,374,610	6,795	22,417,553
Veterans Pensions and Other Benefits.....	11,469	45,808,747	1,967	4,499,308	—	—	13,436	50,308,055	—	—
General Government.....	29,820	128,467,444	2,987	9,042,155	1	17,679	32,808	137,537,278	379	1,130,044
Executive and administrative.....	26,719	115,455,682	2,981	9,034,963	1	17,679	28,701	124,508,324	319	1,058,568
Legislative.....	989	2,999,194	6	7,014	—	—	2,995	3,006,208	—	—
Research, planning and statistics.....	2,112	10,012,568	—	178	—	—	2,112	10,012,746	60	71,476
Protection of Persons and Property.....	11,956	53,552,074	—	—	—	—	11,956	53,552,074	9	38,932
Law enforcement.....	201	1,012,279	—	—	—	—	2,493	11,089,827	—	—
Correction.....	2,493	11,089,827	—	—	—	—	8,127	35,494,060	9	34,600
Police protection.....	8,127	35,494,060	—	—	—	—	1,135	5,975,908	—	—
Other.....	1,135	5,975,908	—	—	—	—	—	—	—	—
Transportation and Communications.....	10,155	47,744,014	1,009	3,201,848	1,920	7,876,270	13,084	58,822,132	1,444	5,360,149
Airways.....	3,928	19,021,901	472	1,489,198	4,400	20,511,099	4,415	1,923,023	546	1,987,196
Highways, roads and bridges.....	242	1,519,637	173	403,366	—	—	164	1,086,288	95	170,492
Railways.....	164	1,086,288	—	—	—	—	2,612	12,194,779	—	—
Telephone, telegraph and wireless.....	2,593	12,127,428	19	67,351	—	—	4,920	20,532,701	55	329,952
Waterways.....	2,655	11,414,518	345	1,241,913	1,920	7,876,270	573	2,574,242	748	2,872,479
Other.....	573	2,574,242	—	—	—	—	—	—	—	—
Health.....	3,050	12,672,996	504	1,004,566	—	—	3,554	13,677,562	278	674,629
General.....	395	1,755,388	4	14,233	—	—	399	1,769,621	—	—
Public health.....	677	3,708,936	51	154,247	—	—	728	3,861,283	17	23,280
Hospital care.....	1,978	7,210,672	449	835,966	—	—	2,427	8,046,658	261	651,029

	11,018	44,844,767	15	44,545	4	13,858	11,037	44,930,170	1,972	3,509,812
Social Welfare	23	115,653	—	—	—	—	23	115,653	—	—
Aid to aged persons.....	789	2,815,071	—	—	—	—	789	2,815,071	—	—
Family allowances.....	414	2,045,443	—	—	—	—	414	2,045,443	12	21,987
Labour.....	8,840	35,316,287	3	11,757	—	—	8,843	35,328,044	1,894	3,455,957
National employment services.....	952	4,552,313	12	32,788	4	13,858	968	4,598,959	66	31,868
Other social welfare.....										
Recreational and Cultural Services	1,620	8,370,684	1,645	5,459,116	—	—	3,265	13,829,800	808	2,434,274
Archives, art galleries, museums and libraries.....	313	1,453,056	17	23,992	—	—	330	1,477,058	9	33,366
Parks, beaches and other recreational areas.....	544	2,635,577	1,628	5,435,124	—	—	2,172	8,070,701	752	2,272,934
Physical culture.....	2	—	—	—	—	—	2	3,482	—	—
Other.....	761	4,278,559	—	—	—	—	761	4,278,559	47	127,974
Education	1,812	8,003,123	20	39,429	—	—	1,832	8,042,552	374	171,107
Indian and Eskimo schools and schools in N.W.T.....	1,795	7,913,768	20	39,429	—	—	1,815	7,953,197	374	171,107
Universities, colleges and other schools.....	17	89,355	—	—	—	—	17	89,355	—	—
Natural Resources and Primary Industries	13,520	69,137,312	1,555	6,337,369	323	1,357,716	15,398	76,562,397	997	2,716,144
Fish and game.....	1,697	8,948,650	28	329,883	323	1,357,716	2,048	10,666,249	110	646,303
Forests.....	966	4,986,074	65	333,971	—	—	1,031	5,320,045	115	112,424
Lands—settlement and agriculture.....	7,831	38,644,562	1,118	4,354,083	—	—	8,949	42,998,045	160	1,079,597
Minerals and mines.....	1,310	7,893,898	74	310,925	—	—	1,384	8,204,823	—	—
Water resources.....	213	1,169,704	4	13,206	—	—	217	1,182,910	13	78,307
Other.....	1,503	7,494,424	266	995,301	—	—	1,769	8,489,725	609	799,513
Trade and Industrial Development	1,198	5,551,196	—	—	—	—	1,198	5,551,196	55	227,511
Public Service and Trading Enterprises	154	646,661	—	—	—	—	154	646,661	36	220,096
Other	36,218	119,479,932	122	426,596	4	13,961	36,344	119,920,489	1,405	4,464,044
Civil Defence.....	138	599,370	35	87,413	—	—	170	686,783	—	—
International co-operation and assistance.....	2,636	968,864	—	—	—	—	113	568,954	—	—
Immigration and Citizenship.....	2,060	11,718,084	35	84,499	4	13,961	2,678	11,816,544	62	38,485
External Affairs.....	2,060	8,819,107	—	—	—	—	2,060	8,819,107	130	94,070
Railways and collages.....	26,305	101,302,540	24	133,810	—	—	26,419	940,944	621 ²	1,194,212 ²
Post Office.....	4,078	25,551,253	28	120,874	—	—	4,706	21,436,050	552	3,137,277
Other.....										
Grand Totals	164,343 ⁴	702,106,105 ⁴	23,759	80,131,499	2,899	11,810,372	191,001	794,047,976	14,552	43,364,295

¹ Excludes 14,155 employees paid from postal revenues, earning \$24,676,368.

² Excludes Christmas helpers, earning \$3,111,106.
³ Excludes field parties of the Department of Mines and Technical Surveys—prevailing rate employees with earnings of \$633,857; and ships' officers and crews with earnings of \$851,489.
⁴ Excludes the Governor General and 10 Lieutenant-Governors with earnings amounting to \$139,668; 334 judges, earning \$4,667,144; and 24 Ministers of the Crown, earning \$362,695.

6.—Federal Government Employees as at Mar. 31, 1962, and Regular Earnings for the Year Ended Mar. 31, 1962, classified by Department and Principal Branch or Service

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 7.

Department and Branch or Service	Salaried			Prevailing Rate			Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Regular Earnings \$	No.	Em- ployees	Regular Earnings \$	No.	Em- ployees	Regular Earnings \$	Em- ployees	Regular Earnings \$	Em- ployees	Regular Earnings \$
Agriculture	7,481	39,261,498	1,118	4,354,083	—	—	—	—	9,099	43,615,581	186	1,299,693
Administration Branch.....	381	1,852,120	—	—	—	—	—	—	3,381	1,852,120	—	—
Research Branch.....	2,489	13,488,479	913	3,020,333	—	—	—	—	3,402	17,108,812	43	132,623
Production and Marketing Branch.....	3,236	15,433,953	60	250,846	—	—	—	—	3,296	15,684,799	38	279,788
Board of Grain Commissioners.....	1,035	4,488,115	—	2,139	—	—	—	—	1,035	4,480,254	—	—
Land rehabilitation, irrigation and water storage projects.....	792	3,795,076	145	480,765	—	—	—	—	937	4,275,841	83	433,652
Special.....	48	203,755	—	—	—	—	—	—	48	203,755	22	453,630
Atomic Energy—Atomic Energy Control Board	11	56,961	—	—	—	—	11	56,961	—	—	—	—
Auditor General's Office	152	958,080	—	—	—	—	152	958,080	—	—	—	—
Board of Broadcast Governors	31	192,241	—	—	—	—	31	192,241	—	—	—	—
Chief Electoral Officer, Office of the	18	82,947	—	—	—	—	18	82,947	—	—	—	—
Citizenship and Immigration	4,508	19,543,543	65	152,383	—	—	4,577	19,709,784	495	228,753	—	—
Departmental Administration.....	198	533,810	1	3,910	—	—	169	757,130	—	—	—	—
Citizenship.....	188	873,813	—	—	—	—	1,906	7,988,303	55	25,778	—	—
Immigration Branch.....	1,874	7,892,047	32	76,255	—	—	2,304	10,110,538	440	202,975	—	—
Indian Affairs Branch.....	2,208	10,024,463	32	72,217	—	—	—	—	—	—	—	—
Civil Service Commission	696	3,533,653	—	—	—	—	696	3,533,653	18	12,964	—	—
Defence Production	1,485	7,825,200	—	—	—	—	1,485	7,825,200	32	35,346	—	—
External Affairs	2,164	9,339,113	—	—	—	—	2,164	9,339,113	130	94,070	—	—
Departmental Administration.....	957	4,818,530	—	—	—	—	957	4,818,530	—	—	—	—
Representation Abroad.....	1,111	4,070,769	—	—	—	—	1,111	4,070,769	130	94,070	—	—
External Aid Office.....	84	366,837	—	—	—	—	84	366,837	—	—	—	—
International Joint Commission.....	12	82,977	—	—	—	—	12	82,977	—	—	—	—
Finance	5,195	20,344,591	—	—	—	—	5,195	20,344,591	132	271,679	—	—
General Administration—	250	1,613,446	—	—	—	—	250	1,613,446	—	—	—	—
Departmental Administration.....	4,488	16,728,787	—	—	—	—	4,488	16,728,787	130	288,884	—	—
Comptroller of the Treasury.....	438	1,941,308	—	—	—	—	438	1,941,308	—	—	—	—
Administration of various Acts.....	19	61,050	—	—	—	—	19	61,050	2	2,845	—	—
Contingencies and miscellaneous.....	—	—	—	—	—	—	—	—	—	—	—	—
Fisheries	1,616	8,322,342	28	329,883	—	—	1,644	10,239,941	104	632,832	—	—
General Services.....	1,053	5,282,739	27	315,634	—	—	1,080	6,718,005	84	553,777	—	—

Special.....	32	136,925	1	14,249	12	44,972	45	196,146	39,201
Fisheries Research Board of Canada.....	531	3,102,678	—	—	60	223,112	591	3,325,790	40,554
Forestry.....	966	4,956,074	65	333,371	—	—	1,031	5,320,045	112,424
Department Administration.....	139	599,414	2	34,957	—	—	141	634,371	29
Forest Research Branch.....	212	1,206,000	54	248,394	—	—	266	1,454,394	14,864
Forest Entomology and Pathology Branch.....	464	2,320,553	—	10,583	—	—	464	2,331,136	75,031
Forest Products Research Branch.....	151	860,107	9	40,037	—	—	160	900,144	22,529
Governor General—Office of the Secretary⁵.....	16	73,619	—	—	—	—	16	73,619	—
Insurance.....	102	608,379	—	—	—	—	102	608,379	—
Justice.....	2,871	13,061,005	—	—	—	—	2,871	13,061,005	38,932
Department.....	378	1,991,178	—	—	—	—	378	1,991,178	4,332
Penitentiaries.....	2,493	11,069,827	—	—	—	—	2,493	11,069,827	34,600
Labour.....	9,465	38,188,007	3	11,757	—	—	9,468	38,199,764	3,492,639
General Administration.....	573	2,628,296	—	—	—	—	573	2,628,296	36,682
Special Services.....	13	61,509	—	—	—	—	13	61,509	—
Technical and Vocational Training Assistance.....	17	89,355	—	—	—	—	17	89,355	—
Government Employees Compensation.....	22	92,560	—	—	—	—	22	92,560	—
Unemployment Insurance Commission.....	8,840	35,316,287	3	11,757	—	—	8,843	35,328,044	1,894
Legislation.....	955	2,842,656	6	7,014	—	—	961	2,849,650	3,455,057
The Senate.....	161	533,537	—	—	—	—	161	533,537	—
House of Commons.....	750	2,127,835	—	—	—	—	750	2,127,835	—
Library of Parliament.....	44	181,264	6	7,014	—	—	50	188,278	—
Mines and Technical Surveys¹.....	2,684	15,080,655	79	325,775	58	285,935	2,821	15,695,365	—
Administration Services.....	225	1,152,327	2	8,196	—	—	227	1,160,523	—
Surveys and Mapping Branch.....	1,134	5,667,601	1	3,258	58	285,935	1,193	5,956,794	—
Geological Survey of Canada.....	528	3,111,759	10	30,814	—	—	538	3,142,573	—
Mines Branch.....	556	3,615,437	62	271,915	—	—	618	3,887,352	—
Geographical Branch.....	66	396,198	—	—	—	—	66	396,198	—
Dominion Observatories.....	129	871,678	3	12,388	—	—	132	884,066	—
General.....	29	170,941	1	2,204	—	—	30	173,145	—
Dominion Coal Board.....	17	94,714	—	—	—	—	17	94,714	—
National Defence.....	30,794	119,559,118	13,935	50,076,567	647	2,500,888	45,376	172,136,573	22,382,207
Departmental Administration.....	610	2,797,947	13	41,025	—	—	623	2,838,972	—
Inspection Services.....	1,245	5,452,697	47	149,165	—	—	1,292	5,601,862	—
Royal Canadian Navy.....	6,496	25,648,304	3,818	15,180,024	647	2,500,888	10,961	43,329,216	1,615
Canadian Army.....	11,463	41,402,117	4,794	18,193,724	—	—	16,257	59,595,841	2,029
Royal Canadian Air Force.....	8,489	30,710,872	5,009	15,503,163	—	—	13,468	46,214,035	2,917
Defence Research and Development.....	2,521	13,547,181	254	1,009,466	—	—	2,775	14,556,647	202
National Film Board.....	730	4,086,323	—	—	—	—	730	4,086,323	127,974
National Gallery of Canada.....	67	295,969	1	3,665	—	—	68	299,634	6,215
National Health and Welfare.....	4,376	18,356,807	541	1,096,312	4	13,961	4,821	19,467,080	687,336
Departmental Administration.....	1,325	1,354,431	4	14,233	—	—	329	1,381,664	320
National Health Branch.....	3,102	13,468,802	502	994,666	—	13,961	3,608	14,477,429	687,016

For footnotes, see end of table, p. 139.

6.—Federal Government Employees as at Mar. 31, 1962, and Regular Earnings for the Year Ended Mar. 31, 1962, classified by Department and Principal Branch or Service—concluded

Department and Branch or Service	Salaried			Prevailing Rate			Ships' Officers and Crews			Totals			Casuals and Others		
	Em- ploys	Regular Earnings \$	No.	Em- ploys	Regular Earnings \$	No.	Em- ploys	Regular Earnings \$	No.	Em- ploys	Regular Earnings \$	No.	Em- ploys	Regular Earnings \$	No.
National Health and Welfare—concluded															
Welfare Branch.....	814	2,934,206	—	35	87,413	—	—	—	—	814	2,934,206	—	—	—	—
General.....	135	599,368	—	—	—	—	—	—	—	170	686,781	—	—	—	—
National Research Council including the Medical Research Council.....	2,620	14,905,857	—	—	—	—	—	—	—	2,620	14,905,857	583	3,072,277	—	—
National Revenue.....	14,355	67,116,385	9	9	32,138	—	1	17,679	—	14,365	67,166,202	—	—	—	—
Customs and Excise Divisions.....	7,417	35,366,136	—	—	32,138	—	—	17,679	—	7,427	35,410,953	—	—	—	—
Taxation Division.....	6,920	31,649,982	—	—	—	—	—	—	—	6,920	31,649,982	—	—	—	—
Tax Appeal Board.....	18	105,257	—	—	—	—	—	—	—	18	105,257	—	—	—	—
Northern Affairs and National Resources.....	2,011	10,914,701	1,908	—	6,445,441	—	—	—	—	3,919	16,460,142	1,381	3,176,022	—	—
Departmental Administration.....	170	877,228	—	—	—	—	—	—	—	179	877,228	—	—	—	—
Northern Co-ordination and Research.....	11	54,636	—	—	—	—	—	—	—	11	54,636	—	—	—	—
National Parks Branch.....	632	3,091,676	1,628	—	5,435,124	—	—	—	—	2,260	8,526,800	758	2,285,405	—	—
Water Resources Branch.....	213	1,169,706	4	—	13,206	—	—	—	—	217	1,182,912	13	78,307	—	—
Northern Administration Branch.....	800	4,036,175	264	—	989,839	—	—	—	—	1,064	5,026,014	609	799,513	—	—
National Museum of Canada.....	75	417,528	12	—	7,272	—	—	—	—	87	424,800	1	12,658	—	—
Canadian Government Travel Bureau.....	101	387,752	—	—	—	—	—	—	—	101	387,752	—	—	—	—
Post Office.....	26,395	101,302,235	24	—	133,810	—	—	—	—	26,419	101,436,045	621	1,194,212	—	—
Departmental Administration.....	309	1,519,647	—	—	—	—	—	—	—	309	1,519,647	—	—	—	—
Operations.....	25,820 ^a	97,743,706 ^a	—	24	133,810	—	—	—	—	25,644	97,577,516	621 ^b	1,194,212 ^c	—	—
Transportation.....	90	491,961	—	—	—	—	—	—	—	90	491,961	—	—	—	—
Financial Services.....	376	1,546,921	—	—	—	—	—	—	—	376	1,546,921	—	—	—	—
Privy Council.....	228	1,233,357	—	—	—	—	—	—	—	228	1,233,357	—	—	—	—
Privy Council Office.....	84	453,314	—	—	—	—	—	—	—	84	453,314	—	—	—	—
Prime Minister's Residence.....	5	19,140	—	—	—	—	—	—	—	5	19,140	—	—	—	—
Emergency Measures Organization.....	74	412,837	—	—	—	—	—	—	—	74	412,837	—	—	—	—
Special.....	65	348,086	—	—	—	—	—	—	—	65	348,086	—	—	—	—
Public Archives and National Library.....	164	709,776	4	4	13,055	—	—	—	—	168	722,831	5	14,493	—	—
Public Archives.....	116	499,772	—	—	13,055	—	—	—	—	120	512,827	5	14,493	—	—
National Library.....	48	210,004	—	—	—	—	—	—	—	48	210,004	—	—	—	—
Public Printing and Stationery.....	610	2,738,697	1,161	—	4,989,653	—	—	—	—	1,771	7,728,350	8	6,598	—	—
Public Works.....	6,149	23,523,840	1,997	—	4,472,564	—	—	—	—	8,269	28,916,329	490	2,138,451	—	—
General Administration.....	1,497	8,185,181	27	—	28,599	—	—	—	—	1,524	8,213,780	5	1,301,875	—	—
Public Buildings Construction and Services.....	4,428	14,378,378	1,768	—	3,973,833	—	—	—	—	6,196	18,352,211	113	737,814	—	—
Harbours and Rivers Engineering Services.....	85	355,944	13	—	57,006	—	—	—	—	222	1,301,875	234	1,200,632	—	—

Development Engineering Services.....	138	634,337	189	414,126	—	—	327	1,048,463	138	188,414
Royal Canadian Mounted Police.....	8,127	35,494,060	—	—	—	—	8,127	35,494,060	—	—
General Services.....	745	3,773,352	—	—	—	—	745	3,773,352	—	—
Patent and Copyright Office.....	431	2,212,253	—	—	—	—	431	2,212,253	—	—
	314	1,561,099	—	—	—	—	314	1,561,099	—	—
Trade and Commerce.....	3,676	17,647,461	—	178	—	—	3,676	17,647,639	115	298,848
Departmental Administration.....	465	2,509,748	—	—	—	—	465	2,509,748	—	—
Trade Commission Service.....	560	2,491,714	—	—	—	—	560	2,491,714	—	—
Exhibitions Branch.....	69	211,968	—	—	—	—	42	211,986	—	—
Standards Branch.....	407	2,058,818	—	—	—	—	407	2,058,818	—	—
Dominion Bureau of Statistics.....	2,112	10,012,568	—	178	—	—	2,112	10,012,746	—	—
National Energy Board.....	60	362,637	—	—	—	—	60	362,637	—	—
Transport.....	10,911	51,008,877	845	2,849,942	1,739	6,701,410	13,498	60,560,229	1,124	4,939,330
Departmental Administration.....	573	2,574,241	—	—	—	—	573	2,574,241	—	—
Marine Services—										
Marine Services Administration, including Agencies.....	230	1,031,276	—	—	—	—	230	1,031,276	—	—
Aids to Navigation.....	935	2,634,566	219	257,828	42	59,755	1,196	2,634,549	164	127,741
Canals.....	294	1,128,030	113	420,384	18	65,303	125	1,631,719	136	527,326
St. Lawrence and Saguenay Rivers Ship Channels	27	158,098	—	—	122	440,169	163	598,168	23	58,793
Canadian Marine Service.....	55	339,532	—	506,895	1,557	6,136,192	1,613	6,992,459	191	1,132,957
Marine Regulations.....	343	1,702,691	—	—	—	—	343	1,702,691	—	—
Railway and Steamship Services.....	8	32,160	—	—	—	—	8	32,160	—	—
Air Services—										
Air Services Administration.....	429	1,686,371	—	—	—	—	429	1,686,371	—	—
Construction Services Administration.....	534	3,070,512	6	7,586	—	—	540	3,078,098	58	173,691
Civil Aviation Branch.....	2,881	13,820,133	466	1,451,612	—	—	3,347	15,301,745	488	1,513,605
Telecommunications and Electronics Branch.....	2,593	12,127,427	19	67,351	—	—	2,612	12,194,778	55	329,892
Metecological Branch.....	1,741	9,093,951	25	108,486	—	—	1,766	9,202,437	9	30,305
Air Transport Board.....	84	444,885	—	—	—	—	84	444,885	—	—
Board of Transport Commissioners for Canada.....	161	1,046,739	—	—	—	—	161	1,046,739	—	—
Canadian Maritime Commission.....	23	118,535	—	—	—	—	23	118,535	—	—
Veterans Affairs.....	11,469	45,808,746	1,967	4,499,308	—	—	13,436	50,308,054	—	—
Departmental Administration.....	523	2,101,197	3	9,282	—	—	526	2,110,479	—	—
District Services.....	618	2,441,037	121	427,407	—	—	739	2,868,444	—	—
Veterans Welfare Services.....	736	3,363,963	—	—	—	—	736	3,363,963	—	—
Treatment Services.....	8,168	30,766,970	1,843	4,062,619	—	—	10,011	34,829,589	—	—
Prosthetic Services.....	217	939,060	—	—	—	—	217	939,060	—	—
Veterans' Bureau.....	129	633,313	—	—	—	—	129	633,313	—	—
War Veterans Allowance Board.....	24	137,382	—	—	—	—	24	137,382	—	—
Canadian Pension Commission.....	350	1,953,058	—	—	—	—	350	1,953,058	—	—
Soldier Settlement and Veterans' Land Act.....	704	3,472,766	—	—	—	—	704	3,472,766	—	—
Grand Totals.....	164,343 ¹	702,106,105 ²	23,759	80,131,499	2,899	11,810,372	191,001	794,047,976	14,532	43,364,295

¹ Includes North Atlantic Treaty Organization and Canada's civilian participation as a member of the International Commission for Supervision and Control in Indo-China.

² Excludes field parties—prevailing rate employees with earnings of \$633,857; and ships' officers and crews with earnings of \$851,489.

³ Excludes 14,155 employees paid from postal revenues, earning \$24,076,368.

⁴ Excludes Christmas helpers, earning \$3,111,106.

⁵ Excludes the Governor General and 10 Lieutenant-Governors with earnings amounting to \$139,668; 334 judges, earning \$4,667,144; and 24 Ministers of the Crown, earning \$362,688.

Agency and Proprietary Corporations and Other Agencies.—The following are organizations owned by the Federal Government as at Mar. 31, 1962. Employees and earnings are shown by month in Table 7; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 130.

Agency Corporations

Atomic Energy of Canada Limited	Defence Construction (1951) Limited
Canadian Arsenals Limited	National Battlefields Commission
Canadian Commercial Corporation	National Capital Commission
Canadian Patents and Development Limited*	National Harbours Board
Crown Assets Disposal Corporation	Northern Canada Power Commission

Proprietary Corporations

Canadian Broadcasting Corporation	Export Credits Insurance Corporation
Canadian National Railways	Farm Credit Corporation
Canadian Overseas Telecommunication Corporation	Northern Transportation Company Limited
Central Mortgage and Housing Corporation	Polymer Corporation Limited
Cornwall International Bridge Company Limited	St. Lawrence Seaway Authority
Eldorado Aviation Limited	Trans-Canada Air Lines
Eldorado Mining and Refining Limited	

Other Agencies

Bank of Canada	Northern Ontario Pipe Line Crown Corporation†
Canadian Wheat Board	Office of the Custodian
Industrial Development Bank	

7.—Employees and Earnings in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1961 and 1962

Month	1960-61		1961-62	
	Employees	Earnings	Employees	Earnings
	No.	\$'000	No.	\$'000
April.....	138,870	51,566	133,691	50,103
May.....	142,556	53,758	137,101	55,452
June.....	146,039	54,489	142,139	63,225
July.....	148,528	55,836	146,253	59,705
August.....	148,879	56,963	145,914	58,653
September.....	146,200	54,161	143,568	56,131
October.....	143,104	53,626	140,591	56,384
November.....	139,591	51,966	138,609	54,344
December.....	135,984	51,582	134,770	53,428
January.....	134,455	51,265	132,351	53,587
February.....	132,820	48,956	132,215	51,665
March.....	134,609	52,114	132,622	53,830

PART V.—CANADA'S EXTERNAL RELATIONS‡

Canada's Status in the Commonwealth.—The Imperial Conference held in London in 1926 marked a turning point in the history of the then British Empire and was an important step in the evolution from an Empire to a Commonwealth. At the 1926 Conference the self-governing countries, consisting of Britain and the Dominions, were described as being "autonomous countries within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members

* Staffed by employees of the National Research Council.

† Staffed by employees of the Defence Research Board and Defence Construction (1951) Limited.

‡ Prepared by the Department of External Affairs, Ottawa.

of the British Commonwealth of Nations". The Governors General of the Dominions were recognized as having in all essential respects the same constitutional position as the Crown in Britain. It was also stated by the Conference that "it is the right of the Government of each Dominion to advise the Crown in all matters relating to its own affairs". Subsequent to this important meeting, Canada's stature and status in the international community continued to grow. It exercised the powers of treaty-making and established its own diplomatic missions overseas. The Statute of Westminster in 1931 provided more explicit recognition of the principles of equality of status by removing the remaining limitations on the legislative autonomy of Commonwealth countries. As a further development of Canada's independent position, all legal cases started in Canada after Dec. 23, 1949 can no longer be appealed to the Privy Council in London. The Supreme Court of Canada has become, therefore, the final court of appeal for all Canadian legal cases. Talks have been held between the federal Minister of Justice and the provincial Attorneys General with a view to planning a program to give Canada the sole right of amending its own Constitution—now an Act of the British Parliament, entitled "The British North America Act of 1867"—and the Government has announced that it intends to place before Parliament in due course a resolution to this end and to invite the concurrence of the provinces therein.

Canada's International Status.—The growth of Canada's international status is reflected in the development of the Department of External Affairs. A review of the organization and development of that Department is given in the 1952-53 Year Book, pp. 101-104; a brief outline is given at p. 107 of this volume.

The following Section 1 covers Canadian diplomatic representation abroad and representation of other countries in Canada. Section 2 deals with Canada's main international activities during 1962 with respect specifically to the Commonwealth, the United Nations, and the North Atlantic Treaty Organization. International economic aid programs are covered separately. Although these fields are considered to be the most significant for the purposes of this publication, it should be noted that Canada's activities in other areas are also of importance. The *External Affairs Monthly Bulletin** covers all activities of the Department on a detailed, monthly basis.

* Obtainable from the Queen's Printer, Ottawa, \$1 per year.

Section 1.—Diplomatic Representation as at Jan. 31, 1963

NOTE.—Changes in this listing subsequent to Jan. 31, 1963 and names of current representatives are given in *Canadian Representatives Abroad and Representatives of Other Countries in Canada*, published thrice yearly and obtainable from the Queen's Printer, Ottawa, price 35 cents per copy.

1.—Canadian Representation Abroad

Country and Year Representation Established	Present Status of Representative	Address
Argentina.....1941	Ambassador.....	Bartolomé Mitre 478, Buenos Aires
Australia.....1939	High Commissioner.....	State Circle, Canberra
Austria.....1952	Ambassador.....	Karntnerring 5, Vienna
Belgium.....1939	Ambassador.....	35, rue de la Science, Brussels
Bolivia.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Boza Carabaya 831, Plaza San Martín, Lima, Peru
Brazil.....1941	Ambassador.....	Avenida Presidente Wilson 165, Rio de Janeiro
Britain.....1880	High Commissioner.....	Canada House, Trafalgar Square, London S.W.1
Burma.....1958	*Ambassador.....	c/o Office of the High Commissioner for Canada, P.O. Box 990, Kuala Lumpur, Malaya
Cameroun.....1962	Ambassador.....	National Bank of Commerce and Industry Building, Yaounde

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Central African Republic.....1962	*Ambassador.....	c/o Canadian Embassy, National Bank of Commerce and Industry Building, Ya- ounde, Cameroun
Ceylon.....1953	High Commissioner.....	6 Gregory's Road, Cinnamon Gardens, Colombo
Chad.....1962	*Ambassador.....	c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun
Chile.....1942	Ambassador.....	Agustinas 1225, 5th floor, Santiago
Colombia.....1953	Ambassador.....	Carrera 10, 16-92, 8th floor, Bogota
Congo (Brazzaville).....1962	*Ambassador.....	c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun
Congo (Leopoldville).....1962	Chargé d'affaires <i>ad interim</i> and Consul.....	Building C.C.C.I., Boulevard Albert 1 ^{er} , Leopoldville
Costa Rica.....1961	Ambassador.....	4th floor, Edificio Banco Anglo Costarri- cense Avenida 2y, Calle 3, San José
Cuba.....1945	Ambassador.....	Calle 30, No. 518, Esquina A7A, Miramar, Havana
Cyprus.....1961	*High Commissioner.....	c/o Canadian Embassy, Farmer's Bldg., 8 Rehov Kaplan, Tel Aviv, Israel
Czechoslovakia.....1943	Ambassador.....	Mickiewiczova 6, Prague 6
Dahomey.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, 4th floor New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria
Denmark.....1946	Ambassador.....	Prinsesse Maries Allé 2, Copenhagen
Dominican Republic.....1954	Ambassador.....	Edificio Copello, 408 Calle El Conde, Santo Domingo
Ecuador.....1961	Ambassador.....	Edificio I.C.S.A., 120 Diagonal Seminario Mendr y Avenida 10 de Agosto, 3rd floor, Quito
El Salvador.....1962	Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica
Finland.....1949	Ambassador.....	Pohjois Esplanadaokatu 25B, Helsinki
France.....1928	Ambassador.....	35 avenue Montaigne, Paris VIII
Gabon.....1962	*Ambassador.....	c/o Canadian Embassy, National Bank of Commerce and Industry Building, Yaounde, Cameroun
Germany.....1950	Ambassador.....	Zitelmannstrasse 22, Bonn
Ghana.....1957	High Commissioner.....	E 115/3 Independence Ave., Accra
Greece.....1943	Ambassador.....	31, avenue Vassilissis Sofias, Athens 138
Guatemala.....1961	*Ambassador.....	5a Avenida 11-70 Zona I, Guatemala City
Guinea.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Avenue, Accra, Ghana
Haiti.....1954	Ambassador.....	Route du Canapé Vert, St. Louis de Turgeau, Port-au-Prince
Honduras.....1961	*Ambassador.....	c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica
Iceland.....1949	*Ambassador.....	c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway
India.....1947	High Commissioner.....	4 Aurangzeb Road, New Delhi
Indonesia.....1953	Ambassador.....	Djalan Budi Kemuliaan No. 6, Djakarta
Iran.....1958	Ambassador.....	Bexrouke House corner of Takhte Djam- chid Avenue and Forsat Street, Tehran
Iraq.....1961	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clémenceau, Beirut, Lebanon
Ireland.....1940	Ambassador.....	92 Merrion Square West, Dublin
Israel.....1953	Ambassador.....	Farmer's Bldg., 8 Rehov Kaplan, Tel Aviv
Italy.....1947	Ambassador.....	Via G.B. de Rossi 27, Rome
Ivory Coast.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Jamaica.....1962	High Commissioner.....	Barclay's Bank Bldg., King Street, Kingston
Japan.....1929	Ambassador.....	16 Omote-Machi, 3-Chome, Akasaka Mi- nato-Ku, Tokyo
Lebanon.....1954	Ambassador.....	Immeuble Alpha, rue Clémenceau, Beirut
Luxembourg.....1945	*Ambassador.....	c/o Canadian Embassy, rue de la Science, Brussels, Belgium

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Malaya.....1958	High Commissioner.....	Great Eastern Life Assurance Bldg., 44 Ampang Rd., Kuala Lumpur
Mexico.....1944	Ambassador.....	Melchor Ocampo 463-7, Mexico 5, D.F.
Morocco.....1962	*Ambassador.....	c/o Canadian Embassy, Edificio España, Plaza de España 2, Madrid, Spain
Netherlands.....1939	Ambassador.....	5-7 Sophialaan, The Hague
New Zealand.....1940	High Commissioner.....	Government Life Insurance Bldg., Custom- house Quay C.I., Wellington
Nicaragua.....1961	*Ambassador.....	c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica
Niger.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria
Nigeria.....1960	High Commissioner.....	4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos
Norway.....1943	Ambassador.....	Fridtjof Nansens Plass 5, Oslo
Pakistan.....1950	High Commissioner.....	Metropole Hotel, Victoria Road, Karachi
Panama.....1961	*Ambassador.....	c/o Canadian Embassy, 4th floor, Edificio Banco Anglo Costarricense, Avenida 2y, Calle 3, San José, Costa Rica
Paraguay.....1962	*Ambassador.....	c/o Canadian Embassy, Bartolomé Mitre 478, Buenos Aires, Argentina
Peru.....1944	Ambassador.....	Edificio Boza, Carabaya 831, Plaza San Martín, Lima
Poland.....1943	Ambassador.....	Ulica Katowicka 31, Saska Kępa, Warsaw
Portugal.....1952	Ambassador.....	Rua Marquês da Fronteira No. 8, Lisbon
Senegal.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria
Sierra Leone.....1961	*High Commissioner.....	c/o Office of the High Commissioner for Canada, 4th floor, New Barclays Bank Bldg., 40 Marina Drive, Lagos, Nigeria
South Africa.....1940	Ambassador.....	Suite 66, Kerry Bldg., 238 Vermeulen St. Pretoria
Spain.....1953	Ambassador.....	Edificio España, Plaza de España 2, Madrid
Sudan.....1961	*Ambassador.....	c/o Canadian Embassy, 6 Sharia Roustom Pasha, Garden City, Cairo, United Arab Republic
Sweden.....1947	Ambassador.....	Strandvagen 7-C, Stockholm
Switzerland.....1947	Ambassador.....	88 Kirchenfeldstrasse, Berne
Tanganyika.....1962	High Commissioner.....	Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam
Thailand.....1961	*Ambassador.....	c/o Office of the High Commissioner for Canada, Great Eastern Life Assurance Co. Bldg., 44 Ampang Rd., Kuala Lumpur, Malaya
Togo.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Trinidad and Tobago.....1962	High Commissioner.....	72 South Quay, Port-of-Spain, Trinidad
Tunisia.....1961	*Ambassador.....	c/o Canadian Embassy, 88 Kirchenfeld- strasse, Berne, Switzerland
Turkey.....1947	Ambassador.....	Ahmet Agaoglu Sokagi, No. 32, Cankaya, Ankara
Uganda.....1962	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam, Tan- ganyika
Union of Soviet Socialist Re- publics.....1943	Ambassador.....	23 Starokonyushenny Pereulok, Moscow
United Arab Republic.....1954	Ambassador.....	6 Sharia Roustom Pasha, Garden City, Cairo
United States of America.....1927	Ambassador.....	1746 Massachusetts Ave. N.W., Washington 6, D.C.
Upper Volta.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Uruguay.....1952	Ambassador.....	1409 Avenida Agraciada, 7th floor, Montevideo
Venezuela.....1952	Ambassador.....	Avenida La Estancia No. 10, Ciudad Commercial Tamanaco, Caracas
Yugoslavia.....1943	Ambassador.....	Proliterskih Brigada 69, Belgrade

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
Other Missions		
Canadian Military Mission....1946	Head of Mission.....	Perthshire Block, Olympic Stadium, Headquarters Berlin (British Sector)
Delegation of Canada to the North Atlantic Council.....1952	Permanent Representative and Ambassador.....	Place du Maréchal de Lattre de Tassigny, Paris XVI, France
Organization for Economic Co- operation and Development.1961	Permanent Representative.....	Place du Maréchal de Lattre de Tassigny, Paris XVI, France
Mission of Canada to European Communities.....1960	Representative and Amba- sador.....	35, rue de la Science, Brussels 4
Permanent Delegation of Cana- da to the United Nations 1948	Permanent Representative.....	750 Third Ave., New York, N.Y.
Permanent Delegation of Cana- da to European Office of the United Nations.....1948	Permanent Representative.....	16, Parc du Chateau Banquet, Geneva
Consulates		
Brazil.....1947	Consul.....	Rua 7 de Abril 252, São Paulo
Congo (Leopoldville).....1960	Chargé d'Affaires <i>ad interim</i> and Consul	Edifice C.C.C.I. Blvd. Albert 1er, Leopold- ville
Germany.....1956	Consul General.....	Ferdinandstrasse 69, Hamburg
Republic of the Philippines...1949	Consul General.....	Third Floor, L and S Bldg., 1414 Dewey Blvd., Manila
United States of America.....1948	Consul General.....	607 Boylston St., Boston 16, Mass.
".....1947	Consul General.....	Suite 1412, Garland Bldg., 111 North Wa- bash Ave., Chicago, Ill.
".....1948	Consul.....	1139 Penobscot Bldg., Detroit 26, Mich.
".....1953	Consul General.....	510 W. Sixth St., Los Angeles 14, Cal.
".....1952	Consul General.....	Suite 1710, 225 Baronne St., New Orleans 12, La.
".....1943	Consul General.....	680 Fifth Ave., New York, N.Y.
".....1947	Honorary Vice-Consul.....	443 Congress St., Portland, Me.
".....1948	Consul General.....	333 Montgomery St., San Francisco 4, Cal.
".....1953	Consul General.....	1407 Tower Bldg., 7th Ave. at Olive Way, Seattle 1, Wash.
".....1961	Consul.....	3 Penn Center Plaza, Philadelphia 2, Pa.

2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
Argentina.....1941	Ambassador.....	211 Stewart St., Ottawa
Australia.....1940	High Commissioner.....	90 Sparks St., Ottawa
Austria.....1952	Ambassador.....	85 Range Road, Ottawa
Belgium.....1937	Ambassador.....	168 Laurier Ave. E., Ottawa
Brazil.....1941	Ambassador.....	305 Stewart St., Ottawa
Britain.....1928	High Commissioner.....	Earncliffe, Ottawa
Burma.....1958	Ambassador.....	c/o Embassy of Burma, 2300 South St. N.W., Washington 8, D.C., U.S.A.
Cameroun.....1962	Ambassador.....	c/o Embassy of Cameroun, 5420 Colorado Ave. N.W., Washington 11, D.C., U.S.A.
Ceylon.....1957	High Commissioner.....	448 Daly Ave., Ottawa
Chile.....1942	Ambassador.....	56 Sparks St., Ottawa
China.....1942	Ambassador.....	201 Wurttemberg St., Ottawa
Colombia.....1953	Ambassador.....	The Roxborough, Ottawa
Cuba.....1945	Ambassador.....	85 Range Road, Ottawa
Czechoslovakia.....1942	Ambassador.....	171 Clemow Ave., Ottawa
Denmark.....1946	Ambassador.....	446 Daly Ave., Ottawa
Dominican Republic.....1954	Ambassador.....	85 Range Road, Ottawa
Ecuador.....1961	Ambassador.....	Chateau Laurier Hotel, Ottawa
El Salvador.....1962	Chargé d'Affaires <i>ad interim</i>	54 Range Road, Ottawa
Finland.....1948	Ambassador.....	85 Range Road, Ottawa
France.....1928	Ambassador.....	42 Sussex Drive, Ottawa

2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established	Present Status of Representative	Address
Gabon.....1962	Ambassador.....	c/o Embassy of Gabon, 4900-16th St. N.W., Washington 11, D.C., U.S.A.
Germany.....1951	Ambassador.....	1 Waverley St., Ottawa
Ghana.....1961	High Commissioner.....	75 Albert St., Ottawa
Greece.....1942	Ambassador.....	Chateau Laurier Hotel, Ottawa
Guatemala.....1961	Ambassador.....	2220 R. St. N.W., Washington 8, D.C., U.S.A.
Guinea.....1962	Ambassador.....	c/o Embassy of Guinea, 2112 Leroy Pl. N.W., Washington 8, D.C., U.S.A.
Haiti.....1954	Ambassador.....	150 Driveway, Ottawa
Iceland.....1948	Ambassador.....	c/o Embassy of Iceland, 1906 23rd St. N.W., Washington, D.C., U.S.A.
India.....1947	High Commissioner.....	200 MacLaren St., Ottawa
Indonesia.....1953	Ambassador.....	275 MacLaren St., Ottawa
Iran.....1956	Ambassador.....	85 Range Road, Ottawa
Iraq.....1961	Ambassador.....	1801 P. St. N.W., Washington 8, D.C., U.S.A.
Ireland.....1939	Ambassador.....	The Roxborough, Ottawa
Israel.....1953	Ambassador.....	45 Powell Ave., Ottawa
Italy.....1947	Ambassador.....	172 MacLaren St., Ottawa
Jamaica.....1962	High Commissioner.....	90 Sparks St., Ottawa
Japan.....1928	Ambassador.....	75 Albert St., Ottawa
Lebanon.....1955	Ambassador.....	The Roxborough, Ottawa
Luxembourg.....1950	Ambassador.....	c/o Embassy of Luxembourg, 2200 Massa- chusetts Ave. N.W., Washington 8, D.C., U.S.A.
Mexico.....1944	Ambassador.....	88 Metcalfe St., Ottawa
Morocco.....1962	Ambassador.....	c/o Embassy of Morocco, 2144 Wyoming Ave. N.W., Washington 8, D.C., U.S.A.
Netherlands.....1939	Ambassador.....	12 Marlborough Ave., Ottawa
New Zealand.....1942	High Commissioner.....	77 Metcalfe St., Ottawa
Norway.....1942	Ambassador.....	140 Wellington St., Ottawa
Pakistan.....1949	High Commissioner.....	505 Wilbrod St., Ottawa
Panama.....1962	Ambassador.....	c/o Embassy of Panama, 2862 McGill Ter. N.W., Washington 8, D.C., U.S.A.
Peru.....1944	Ambassador.....	539 Island Park Drive, Ottawa
Poland.....1942	Ambassador.....	10 Range Road, Ottawa
Portugal.....1952	Ambassador.....	285 Harmer Ave., Ottawa
South Africa.....1938	Ambassador.....	9 Rideau Gate, Ottawa
Spain.....1953	Ambassador.....	149 Daly Ave., Ottawa
Sweden.....1943	Ambassador.....	140 Wellington St., Ottawa
Switzerland.....1946	Ambassador.....	5 Marlborough Ave., Ottawa
Thailand.....1962	Ambassador.....	c/o Permanent Mission of Thailand to the United Nations, 20 East 82nd St., New York 28, N.Y., U.S.A.
Trinidad and Tobago.....1962	High Commissioner.....	Chateau Laurier Hotel, Ottawa
Tunisia.....1957	Ambassador.....	Chateau Laurier Hotel, Ottawa
Turkey.....1944	Ambassador.....	197 Wurtemburg St., Ottawa
Union of Soviet Socialist Republics.....1942	Ambassador.....	285 Charlotte St., Ottawa
United Arab Republic.....1954	Ambassador.....	The Roxborough, Ottawa
United States of America.....1927	Ambassador.....	100 Wellington St., Ottawa
Uruguay.....1948	Chargé d'Affaires <i>ad interim</i>	The Roxborough, Ottawa
Venezuela.....1953	Ambassador.....	The Roxborough, Ottawa
Yugoslavia.....1942	Ambassador.....	12 Blackburn Ave., Ottawa

Section 2.—International Activities, 1962

Subsection 1.—Canada and Commonwealth Relations

Membership in the Commonwealth is one of the cornerstones upon which Canadian foreign policy is built, for Canada supports the extension and development of a strong Commonwealth of Nations and believes that no other association throughout the world has a greater influence for good. Commonwealth membership allows Canada to enjoy an especially close, if perhaps undefinable, relationship with a group of important nations which, despite a diversity of ethnic, economic, racial, religious, cultural and political backgrounds, find usefulness in shared ideals and traditions. Exchanges taking place

between Commonwealth countries are characterized by a readiness to understand if not always to agree. Consultations and exchanges of views are the very lifeblood of the Commonwealth; these exchanges are continuous, not only in the capitals of Commonwealth countries but in other capitals, at the United Nations and at international gatherings.

In addition to these continuing consultations at many levels, two special Commonwealth meetings were held in 1962. In January, the Second Commonwealth Educational Conference was convened in New Delhi. Its purpose was to examine in retrospect the general operation of the Commonwealth Education Program inaugurated at the Oxford Conference in July 1959 and to study certain aspects relating to its extension or modification. The Prime Ministers of the Commonwealth met in London in September, the eleventh of a series of Prime Ministers' Meetings which have been held at intervals since the end of the Second World War. While the Prime Ministers held discussions on many important international questions, the central theme at their 1962 meeting was the European Common Market and the economic implications for the Commonwealth should Britain's application for membership in this association be accepted.

During 1962, membership of the Commonwealth increased from 13 to 16 members. Jamaica and the unitary state of Trinidad and Tobago became members when their independence was achieved in August, and the meeting of Commonwealth Prime Ministers agreed that Uganda should be admitted to membership after attaining independence in October. By the end of the year, Canada had High Commissioners accredited to all member countries of the Commonwealth, including the three newly admitted countries.

Canada's overseas aid for developing countries continued to be directed, in the main, to Commonwealth countries through the Colombo Plan, the Canada-West Indies Aid Program and the Special Commonwealth African Aid Program (SCAAP). Canada's total contribution under the Colombo Plan since the Plan's inception exceeds \$380,000,000; the aid to the West Indies is expected to reach some \$10,000,000 over the period 1958-63 and Canada has pledged aid to Commonwealth countries in Africa through SCAAP to a total of \$10,500,000 for the period 1960-63. In 1962, Canada also extended technical assistance to British Guiana and British Honduras amounting to \$120,000 and to the French-speaking African states in the amount of \$300,000.

Canada is also an active participant in the Commonwealth Scholarship and Fellowship Plan. At the end of 1962 there were approximately 220 Commonwealth students in Canada under this Plan and many Canadians were studying in other Commonwealth countries. Canada has also played a significant part in the training and provision of teachers for service in Commonwealth countries and has assisted in plans for co-operation in technical education. As of the end of November, 119 Canadian teachers were serving under Canadian Government educational aid programs in the less-developed countries of Southeast Asia, Africa and the Caribbean area.

Any chronicle of Commonwealth events for the year 1962 must include the visits paid to Canada in May and June by H. M. the Queen Mother, H. R. H. Prince Philip, and H. R. H. the Princess Royal. Other Commonwealth visitors during the year were President Mohammed Ayub Khan of Pakistan; the Prime Minister of Britain, the Rt. Hon. Harold Macmillan; the Lord Privy Seal, the Rt. Hon. Edward Heath; the Deputy Prime Minister of Australia, the Rt. Hon. John McEwen; the Premier of the Eastern Region of Nigeria, Dr. M. I. Okpara; the Minister of Justice and Attorney General of Nigeria, Dr. T. O. Elias; the Paramount Chief of Basutoland, H. H. Motlotlehi Moshoeshe II; the Minister of Finance of India, Mr. Morarji Desai; the Minister of Works and Surveys of Nigeria, the Hon. I. Wada; the Minister of Communications and Works of St. Vincent, the Hon. C. L. Tannis; and the Minister of Health of Nigeria, Dr. M. A. Majekodunmi.

Subsection 2.—Canada and the United Nations

During 1962, the United Nations contributed significantly to the maintenance of international peace and security. Through the Organization's auspices, an agreement was reached on the political future of West New Guinea which involved the establishment

of a small United Nations force, including a Canadian component, in the territory to facilitate the transition from Netherlands to Indonesian control. The ability of the United Nations to provide a seat for discussion of the Cuban crisis and the part that the Acting Secretary-General played in the negotiations enhanced the prestige of the Organization and encouraged the appointment of U Thant as Secretary-General for a five-year term.

The United Nations General Assembly met three times during the year: at resumed parts of the sixteenth session which were convened in January to discuss Angola, Cuba, the future of Ruanda-Urundi, British Guiana and Southern Rhodesia; in June to approve termination of Belgium trusteeship and Rwanda's and Burundi's accession to independence; and at the commencement of the seventeenth session on Sept. 18. At the seventeenth session, the Canadian Delegation, working with a large representative group of other delegations, helped to maintain the momentum which enabled the Assembly to complete its lengthy agenda consisting of political affairs, economic and social questions, issues of international law and administrative and budgetary matters by Dec. 20, without resort to a resumed session.

For several years, Canada has actively sought a solution to the grave problem of United Nations financing which has resulted from the refusal of certain member states to pay their assessed share of the costs of United Nations peace-keeping operations in the Congo (ONUC) and in the Middle East (UNEF). On July 20, 1962, the International Court of Justice confirmed the view of Canada and other states with its opinion that these peace-keeping costs should be treated as legal expenses of the Organization. At the seventeenth session, on the Canadian Delegation's initiative, the Assembly confirmed the Court's opinion and directed that a working group should meet early in 1963 to endeavour to find an acceptable method for financing United Nations peace-keeping activities.

Colonial issues predominated during the seventeenth session due to the influence of the African-Asian bloc of nations which was fortified by the addition of six new member states—Algeria, Burundi, Rwanda, Uganda, Jamaica and Trinidad and Tobago. During the debate on the report of the Special Committee of Seventeen on Colonialism, the Canadian Delegate, in a firmly worded speech, declared that the Assembly's Declaration on Colonialism should apply universally, including those areas where the Soviet Union dominates subject peoples.

With regard to issues on nuclear tests and disarmament, the Canadian Delegation contributed several constructive suggestions to a resolution which sought to end all nuclear tests by Jan. 1, 1963, and the Delegation participated in the adoption of a resolution on general and complete disarmament which fully reflected Canadian views. On the subject of atomic radiation, the Canadian Delegation continued to focus international attention on the hazards to health resulting from the increasing pollution of the air by radioactivity. A Canadian resolution, co-sponsored by 42 member states, which proposed that efforts to study and report on radioactivity should continue, was adopted by the Assembly. On the issue of outer space, Canada joined with the United States and other delegations in submitting a resolution which was adopted, in a modified form, by the Assembly. The main purpose of this resolution was to ensure that efforts toward promoting technical co-operation in the exploration of outer space would be continued.

At the seventeenth session, the Assembly adopted a number of resolutions on economic questions. The Canadian and Peruvian Delegations were instrumental in reconciling differences among member states regarding the timing of the United Nations Conference on Trade and Development. Canada also initiated a resolution calling on dilatory countries to contribute to the World Food Program which went into effect on Jan. 1, 1963, due to important Canadian initiatives effected at the fifteenth and sixteenth sessions.

Beginning in January 1963, Canada became a member of the United Nations Commission on Human Rights. The Canadian Delegation played an important part in the consideration of questions of human and social rights during the seventeenth session. The Delegation introduced a resolution which resulted in the renewal of the mandate of the

United Nations High Commissioner for Refugees for a period of five years. Canada also co-sponsored resolutions dealing with the United Nations Children's Fund, the Declaration of Human Rights and the Single Convention on Narcotic Drugs.

Through consultations behind the scenes during the seventeenth session, the Canadian Delegation effected important changes which enabled the Assembly to give unanimous approval to a resolution, drafted by India and co-sponsored by Canada and 18 other member states, regarding the proposal to designate a year of international co-operation.

With regard to the issues concerning international law, Canada took the lead in the debate on the important item dealing with the principles of international law concerning friendly relations and co-operation among states. The Canadian Delegation introduced a resolution calling for the affirmation of the rule of law and designating the United Nations Charter as the fundamental statement of principles underlying friendly relations. A compromise resolution, embodying many elements of the Canadian resolution, was adopted unanimously by the General Assembly.

Canadian Financial Contributions to the United Nations.—Canada's assessed share of the costs of United Nations peace-keeping operations in the Congo and the Middle East amounted to approximately \$4,341,000 in 1962. Canada's share of the remaining expenses of the United Nations in 1962 was 3.2 p.c. of a net budget of \$68,082,690 or some \$2,181,000. During the year, Canada contributed to other programs of the United Nations, to the Specialized Agencies, to the International Atomic Energy Agency and to the United Nations Association in Canada as follows:—

Special Programs—	\$
Expanded Program of Technical Assistance.....	2,150,000
Special Fund.....	2,350,000
United Nations High Commissioner for Refugees.....	290,000
United Nations Children's Fund.....	800,000
United Nations Relief and Works Agency.....	1,000,000
Specialized Agencies—	
Food and Agriculture Organization.....	626,000
International Civil Aviation Organization.....	180,000
International Labour Organization.....	394,000
Inter-Governmental Maritime Consultative Organization.....	9,000
United Nations Educational, Scientific and Cultural Organization.....	489,000
World Health Organization.....	712,000
Universal Postal Union.....	18,000
World Meteorological Organization.....	15,000
International Telecommunication Union.....	126,000
Others—	
International Atomic Energy Agency.....	219,000
United Nations Association in Canada.....	12,000
Total.....	9,390,000

Specialized Agencies.—Canada is a member of each of the 12 Specialized Agencies of the United Nations. These Agencies are bodies with wide international responsibilities established by intergovernmental agreement, which act in relationship with the United Nations in order to carry out the terms of the Charter. Co-ordination of the activities of the Specialized Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. Canada is also a member of the International Atomic Energy Agency which, while not a Specialized Agency, plans its activities with them and co-operates in its work with the Administrative Committee on Co-ordination.

Food and Agriculture Organization.—The Food and Agriculture Organization (FAO) came into being in 1945, the first Conference being held in that year in Quebec City. The objectives of the Organization are to raise the levels of nutrition and living standards of its members and to improve the techniques of the production and distribution of food

and agricultural, fishery and forestry products. To this end, the FAO Secretariat collects, analyses and distributes technical and economic information and encourages appropriate national and international action. A 25-member Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference, which is the governing body of the Organization, meets every other year. Headquarters are in Rome, Italy.

Canada has participated actively in FAO activities and is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposal, the FAO Group on Grains, the North American Forestry Commission and other FAO bodies. A number of Canadians are on the staff at Rome headquarters, and many Canadians have undertaken assignments under FAO technical assistance programs. Canadian membership in the Organization is provided for by an Act of the Canadian Parliament passed in 1945. A committee of officials from Canadian Government departments (the Canadian Interdepartmental FAO Committee) has been established to maintain liaison between the FAO Secretariat and the Canadian Government.

United Nations Educational, Scientific and Cultural Organization.—The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms".

Total membership in the Organization at the end of 1962 was 113 states and three associate members. The Organization is made up of three principal organs—the General Conference, which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. The latest General Conference was held at the Headquarters of the Organization in Paris in November and December 1962. It approved a budget of \$39,000,000, nearly one third of which is to be devoted to the educational needs of the developing countries. The Canadian assessment rate is 2.98 p.c. (See also Sect. 5 of Part II of the Education and Research Chapter of this volume.)

International Bank for Reconstruction and Development.—The IBRD or World Bank was founded at the same time as the International Monetary Fund at the Bretton Woods Conference in 1944 to assist the development of productive resources in member countries by extending loans where private capital is not available on reasonable terms and by providing technical assistance. The loans are made from the paid-up subscriptions of member states, from the surplus accumulated by the Bank and from loans raised in the markets of member states. The subscribed capital is \$20,485,000,000 (U.S.). Paid-up subscriptions amount to \$2,049,000,000, of which Canada's share is \$75,000,000. The Bank's first loans were for European postwar reconstruction, but in 1948 the Bank turned to lending for development, and an increasing proportion of its funds has been directed to the less-developed areas of the world. By June 1962 the Bank had made 321 loans totalling over \$6,500,000,000 to finance about 700 projects in 60 countries or territories. Some \$4,800,000,000 of this had been disbursed, of which amount \$1,874,000,000 had been repaid to the Bank or sold to other investors.

International Civil Aviation Organization.—The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the United Nations with headquarters in Canada. Canada is a member of the 27-nation Council which meets in almost continuous session in Montreal, and was represented at the fourteenth session of the Assembly held in Rome in August and September 1962.

International Development Association.—The IDA, a new affiliate of the IBRD, was established in September 1960 to meet the situation of a growing number of less-developed countries whose need for and ability to make use of outside capital is greater

than their ability to service conventional loans. Consequently, the terms of IDA development credits are designed to impose far less burden on the balance of payments of borrowing countries than conventional loans. Credits extended to date have each been for a term of 50 years, bearing no interest. As of June 30, 1962, paid-up subscriptions amounted to \$917,000,000, of which Canada's share was \$37,800,000 (U.S.). IDA began operations in November 1960 and extended its first development credit in May 1961. By the end of June 1962, it had extended a total of 22 development credits amounting to \$235,000,000 to 11 countries in Africa, Asia, the Middle East and the Western Hemisphere.

The International Finance Corporation.—The function of the International Finance Corporation, which is an affiliate of the IBRD, is to promote the growth of productive private enterprise by assisting private capital, by acting as a clearing house in bringing together investment opportunities and private capital and by helping to enlist managerial skill and experience when not otherwise available to a project. Canada has subscribed \$3,520,000 to the capital of the Corporation.

International Labour Organization.—The International Labour Organization (ILO) was originally associated with the League of Nations and became a Specialized Agency of the United Nations in 1946. It brings together representatives of governments, employers and workers from member states in an attempt to promote social justice by improving working and living conditions in all parts of the world. To further this goal, meetings are held usually on an annual basis, the latest of which took place in Geneva in June of 1962. ILO is responsible for the execution of a number of training projects which are financed by the United Nations Special Fund.

Inter-Governmental Maritime Consultative Organization.—Canada, as a member of the Inter-Governmental Maritime Consultative Organization (IMCO) with headquarters in London, England, was represented at the sixth and seventh sessions of the Council held in London during 1962 and at an important Conference for the Prevention of the Pollution of the Sea by Oil held in London under IMCO auspices during March and April of that year.

International Monetary Fund.—The International Monetary Fund, set up by the Bretton Woods Conference in 1944, came into being in 1945. It provides machinery for international consultation and collaboration on monetary, payment and exchange problems. Included in these purposes are the promotion of exchange stability, the elimination of exchange restrictions, the establishment of a multilateral system of current payments and the expansion and balanced growth of international trade. Also, member countries under certain conditions may draw on the resources of the Fund, which now amounts to some \$15,200,000,000. Canada has been represented on the Fund's Board of Executive Directors since 1945.

International Telecommunication Union.—Canada is a member of the International Telecommunication Union (ITU), a Specialized Agency of the United Nations, which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. The Administrative Council of the ITU met in Geneva in the spring of 1962; Canada was represented at that meeting and at meetings of subsidiary bodies which took place during the year.

Universal Postal Union.—One of the oldest and largest of the Specialized Agencies, the Universal Postal Union (UPU), was founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, activities of the Union are carried on by an Executive and Liaison Committee, a Consultative Committee on Postal Studies and an International Bureau. At the Congress held in Ottawa in 1958, Canada was elected to the Executive and Liaison Committee. The fifteenth Congress was held in New Delhi in 1962.

World Health Organization.—The World Health Organization (WHO) came into being in 1948 and is one of the largest of the Specialized Agencies of the United Nations, having a membership of 108. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six Regional Committees), WHO acts as a directing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The fourteenth World Health Assembly was held in Geneva in May-June 1962. (See also the item "International Health" in Subsection 5, Section 1, Part I of the Public Health, Welfare and Social Security Chapter of this volume.)

World Meteorological Organization.—Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the United Nations since 1951 but developed from the International Meteorological Organization, which was founded in 1878. The Director of Meteorological Services, Department of Transport, an elected member of the Executive Committee of WMO, attended the fourteenth session of the Executive Committee held in Geneva in June 1962. Canada acted as host for meetings of one of WMO's important subsidiary bodies, the Commission for Agricultural Meteorology, which held its third session in Toronto in July 1962.

The International Atomic Energy Agency.—Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the United Nations. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world in a variety of ways.

Because Canada is considered to be one of the five members most advanced in nuclear technology, including the production of source materials, this country has served on the Board of Governors since the inception of the Agency. The latest meeting of the IAEA General Conference was held at headquarters in Vienna in September-October 1962.

The International Law Commission.—By Article 13 (1) of the Charter of the United Nations, one of the purposes of the UN General Assembly is to encourage the progressive development of international law and its codification. In order to implement and to assist in this function, the International Law Commission was created by a General Assembly resolution dated Nov. 21, 1947. It is composed of 25 members who are elected in individual capacities. They serve for terms of five years and, in general, represent the main forms of civilization and principal legal systems of the world. On Nov. 28, 1961, Mr. Marcel Cadieux, Deputy Under-Secretary of State for External Affairs and Legal Adviser to the Department of External Affairs of Canada, was elected to membership of this Commission. The 25 countries whose nations form, at present, the International Law Commission are: Afghanistan, Austria, Brazil, Cameroun, Canada, China, Dahomey, Ecuador, Finland, France, Britain, India, Iraq, Israel, Italy, Japan, Mexico, Nigeria, Poland, Spain, the Union of Soviet Socialist Republics, the United Arab Republic, the United States of America, Uruguay and Yugoslavia.

Subsection 3.—Canada and the North Atlantic Treaty Organization*

There were two Ministerial Meetings during 1962 and meetings of the Permanent Representatives of the North Atlantic Council were held continuously throughout the year. Mr. George Ignatieff succeeded Mr. Jules Léger as Permanent Representative, Canada, in July.

The annual spring meeting of Foreign Ministers of the NATO Alliance was held at Athens, Greece, in May and was attended also by Defence Ministers who met separately on May 3. The Ministers discussed the most recent developments in the Berlin situation

* The terms of the Treaty and the organization of the Council and subordinate committees are dealt with in the 1954 Year Book at pp. 113-115. A short review of the events leading up to the establishment of NATO and its subsequent membership is given in the 1960 Year Book at p. 167.

and reaffirmed that general and complete disarmament under effective international control remained the best means of ensuring lasting peace and security. They noted with satisfaction the position taken by the Western powers at the Geneva Disarmament Conference in order to achieve this goal. The Council noted the progress toward closer co-operation in defence policy and welcomed confirmation by the United States that it will continue to make available the nuclear weapons necessary for NATO defence, concerting with its allies on basic plans and arrangements with regard to these weapons. In addition, both the British and United States Governments gave firm assurances that their strategic forces would continue to provide defence against threats to the Alliance beyond the capability of NATO committed forces to deal with. It was also decided to set up special procedures to enable all members of the Alliance to exchange information concerning the role of nuclear weapons in NATO defence. At their separate meeting, the Defence Ministers made a number of recommendations for improving co-operation in sharing within the Alliance the burden of research, development and production of military equipment. The Council reviewed the development of political consultation within the Alliance and noted the steady and encouraging progress made over the previous twelve months in deepening and developing the processes of consultation.

The annual Ministerial Meeting convened in Paris in December, attended by a Canadian Delegation led by the Secretary of State for External Affairs and the Minister of National Defence. In reviewing the international situation, the sound and vigorous state of the alliance was noted. The Ministers agreed that recent attempts by the Soviet Union to tilt the balance of forces against the West by secretly stationing nuclear missiles in Cuba had brought the world to the verge of war and that this peril was only avoided by the firmness and restraint of the United States supported by the alliance and other free nations. The Ministers concluded that constant vigilance of purpose and a spirit of interdependence as well as a readiness to examine any reasonable possibility of reducing international tension must continue to guide the policies of the alliance and that it was a prerequisite of any progress toward equitable settlement of international issues that NATO should maintain its defensive strength. At the same time, the Ministers reaffirmed that general and complete disarmament under effective international control continued to be a question of major concern and they expressed hope that the Soviet attitude which has so far frustrated concrete agreement on any of the key questions at issue would change.

The Ministers agreed that it was necessary to increase the effectiveness of conventional forces. They further agreed that adequate and balanced forces, both nuclear and conventional, were necessary to provide the alliance with the widest possible range of response to whatever threat might be directed against its security. They recognized that a sustained effort will be required to provide and improve these forces. The Ministers invited the Permanent Council to review procedures in order to secure a closer alignment between NATO military requirements and national force plans as well as an equitable sharing of the common defence burden. At the invitation of the Canadian Government it was agreed to hold the next Ministerial Meeting in Ottawa in May 1963.

Permanent representatives of the member countries met between Ministerial Meetings to consider the international, political, economic and military developments of concern to the alliance, review the defence plans of members, deal with expenditures on commonly financed military installations (infrastructure), and study the measures required to provide peacetime readiness and civil defence. Military exercises were held to prove the readiness of the army, naval and air forces assigned to NATO commands.

Canadian Contributions to NATO.—Support for NATO during 1962 continued to be one of the foundations of Canadian foreign policy. As its contribution to the military strength of the alliance, Canada maintains an army brigade and an air division in Europe and supporting forces in Canada. It has assigned a substantial naval force to the Supreme Allied Commander Atlantic (SACLANT) for the defence of the Canada-United States region in case of emergency and participates with the United States in the defence of the North American Continent through the North American Air Defence Command (NORAD).

Since 1950, Canada has contributed approximately \$1,800,000,000 in mutual aid to European members of NATO. The aid program, consisting of contributions to NATO infrastructure and military costs, transfers of equipment to member countries and aircrew training in Canada of NATO forces, continued throughout 1962. This program, while decreasing in magnitude with the changing conditions and the increasing ability of the European members to meet their individual defence requirements, continues to play a vital role in strengthening NATO forces.

Subsection 4.—Canadian External Aid Programs

The Colombo Plan.—The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, Jan. 9-14, 1950. Although the Colombo Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth program. It is designed to assist in the economic development and raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership now includes Australia, Bhutan, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Laos, Malaya, Nepal, New Zealand, North Borneo, Pakistan, the Philippines, Sarawak, Singapore, South Korea, Thailand, Britain and Viet Nam, as well as the United States, which is also engaged in a substantial program of economic aid in the same region. South Korea and Bhutan were admitted to membership in 1962.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year to review projects, exchange views on policy matters and prepare an annual report. It is, as its name implies, a consultative body; no collective policy decisions binding member countries are taken at its meetings. A Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Colombo Plan. Colombo Plan Day was celebrated throughout member countries on July 1, 1961 to commemorate the tenth year of Colombo Plan operations.

From the inception of the Plan in 1950 through April 1962, Canada made available a total of \$381,670,000 for capital and technical assistance projects in South and Southeast Asia. Parliament appropriated \$50,000,000 for Canadian participation in the Colombo Plan in 1961-62.

While ten countries are now receiving capital assistance from Canada, the largest contributions have so far been made to India, Pakistan and Ceylon. The Canadian contribution has consisted primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, power-generating plants, construction and fisheries projects and resources surveys, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs such as industrial metals, asbestos, fertilizer, wheat, flour and butter, from the local sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program, up to October 1962 more than 2,000 persons from all countries in the area had come to Canada for training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health education and social welfare. Nearly 250 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources survey teams and in the installation and operation of capital equipment.

The Consultative Committee of the Colombo Plan held annual meetings at Singapore in 1955, at Wellington in 1956, at Saigon in 1957, at Seattle in 1958, at Jogjakarta in 1959, at Tokyo in 1960, at Kuala Lumpur in 1961 and at Melbourne in 1962. At the

Jogjakarta meeting it was agreed that the Colombo Plan should be extended for another five years from June 1961. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

Canada-West Indies Aid Program.—On the formation of the Federation of the West Indies in 1958, Canada undertook a \$10,000,000 program of economic and technical assistance over the period from 1958-63. The first major project in this program was the provision of two passenger-cargo ships for inter-island transportation at a cost of approximately \$6,000,000. The vessels were commissioned in the summer of 1961 and handed over to the West Indies Government. Tools and equipment valued at \$28,000 have been supplied to a technical school at St. Kitts, a dock costing approximately \$1,000,000 is under construction at St. Vincent, port equipment valued at \$435,000 is being supplied to various islands, a residence for students is being constructed at the University College of the West Indies in Trinidad, and schools, warehouses and water systems are under construction on several of the smaller islands.

Up to Oct. 31, 1962, training programs had been arranged for 43 individuals from the West Indies in different fields, including public administration, information services, fisheries, etc. The 33 Canadian experts who undertook assignments during this period went to Trinidad, Jamaica, St. Lucia, St. Vincent and St. Kitts. They included teachers, soil surveyors and advisers in statistics, legal drafting, housing, films, radio broadcasting, postal services and harbour management.

Commonwealth Technical Assistance Program.—At the Commonwealth Trade and Economic Conference held in Montreal in September 1958, Canada announced a decision to provide funds for technical assistance to Commonwealth countries outside the Colombo Plan area, with particular emphasis on the African territories. By the end of March 1962, Canada had made available \$1,250,000 to this program. Ghana and Nigeria received the greatest amount of aid, although some assistance was extended also to British Guiana, British Honduras, Uganda, Hong Kong and Sierra Leone. The Commonwealth countries in Africa are now eligible for Canadian assistance under a new Special Commonwealth African Aid Program described below.

By Oct. 31, 1962, 59 training programs had been arranged since the inception of the plan, the chief fields being agriculture, co-operatives, mining, geology, engineering, public and business administration, health and social welfare. Twenty-five Canadians had undertaken advisory assignments in Ghana, Nigeria, Uganda, British Guiana and British Honduras in education, public information, public administration, law and agriculture.

Special Commonwealth African Aid Program.—At a meeting of the Commonwealth Economic Consultative Committee in London in September 1960, it was agreed that a program of economic and technical assistance for Commonwealth countries and territories in Africa should be launched. Canada undertook to provide a contribution of \$10,500,000 to this program over a period of three years beginning with the year ended Mar. 31, 1962.

By Oct. 31, 1962, training programs had been arranged in Canada for 103 Africans under this plan and 106 Canadian teachers and other advisers had been sent to Commonwealth countries in Africa, including Gambia, Ghana, Kenya, Mauritius, Nigeria, Sierra Leone, Tanganyika and Uganda. In addition, an aerial survey and mapping project had been undertaken in Nigeria at a cost of \$1,350,000.

Educational Assistance to French-Speaking States in Africa.—In April 1961, the Canadian Government announced that it proposed to offer assistance in the educational field to French-speaking states in Africa, and Parliament subsequently appropriated \$300,000 for this purpose for the year ended Mar. 31, 1962. By the end of 1962, some

13 French-speaking Canadian teachers had been sent to Africa under this program, a supply of paper had been provided for a textbook production centre in Cameroun and other projects were under way.

Co-operation with the United Nations and its Specialized Agencies, and with Other International Aid Programs.—In addition to the annual contributions made to the United Nations Expanded Program of Technical Assistance, Canada also assists by arranging training programs in Canada for individuals studying under the auspices of the different Specialized Agencies. This service is also extended to the technical assistance program of the International Co-operation Administration of the United States as well as to other international aid organizations. Up to Oct. 31, 1962, approximately 2,000 individuals had come to Canada through the various agencies from more than 100 different countries in all parts of the world. Assistance is also given by recruiting Canadians for service with the Specialized Agencies on specific technical assistance assignments in under-developed countries.

Organization.—As of Nov. 9, 1960, the operation and administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order in Council of that date, and placed in charge of an officer known as the Director General of External Aid Programs. The Director General is directly responsible to the Secretary of State for External Affairs for all matters connected with Canadian external assistance programs, including the Colombo Plan, the Canada-West Indies Aid Program, the Special Commonwealth African Aid Program, the Commonwealth Technical Assistance Program, the Commonwealth Scholarship and Fellowship Plan and the Program for French-Speaking African States as well as for operational liaison with aid programs administered by the United Nations and other international agencies.

CHAPTER III.—POPULATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Census of Population

This Section presents only a limited summary of the voluminous data on population recorded by the 1961 Census of Canada, with certain comparable data from earlier censuses. More detailed information is published in a series of reports which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics. A list of these publications is available on request from the Information and Public Relations Division of the Dominion Bureau of Statistics.

Additional 1961 Census data on population may be found in the respective subject-matter chapters of this volume: on immigration and citizenship in Chapter IV; on schooling in Chapter VII; and on the labour force in Chapter XVI. Summary information on housing is given in Chapter XV. (See Index.)

Subsection 1.—Growth and Movement of Population*

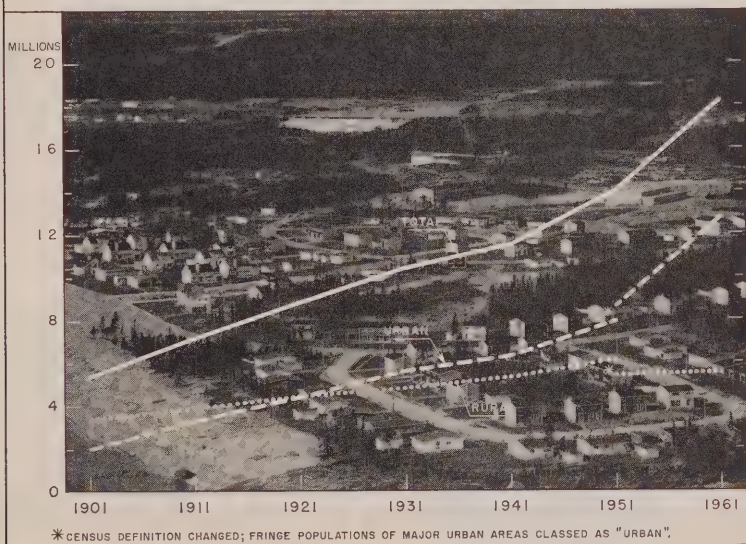
Population Growth.—Canada's population stood at 18,238,000 in 1961 as against 10,377,000 in 1931 and 5,371,000 in 1901. In the first decade of the century, the gain of 34 p.c. was greater than in any censal period up to 1961. Growth was associated with the opening up of the West for settlement and massive immigration from overseas. During the 1901-11 period, about 1,760,000 immigrants entered the country and natural increase amounted to an estimated 1,000,000. As the total increase in population was 1,835,328, it is evident that there was substantial emigration during the period. In the 1911-21 period, population growth dropped to 22 p.c. Military losses in the First World War and losses during the influenza epidemic, which together amounted to about 120,000,

*An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census and Vol. X of the 1951 Census.

were a factor in this decline. Although the flow of immigrants was reduced during the war years, it had been very heavy immediately preceding the War, so that the total number for the period (1,612,000) was very close to that for the previous censal period. However, emigration was also extremely high and the increase in population amounted to 1,581,306, representing 2 p.c. per annum compared with 3 p.c. in the 1901-11 period.

In the decade 1921-31, the rate of increase dropped to 18 p.c. Immigration fell to 1,200,000 and emigration was estimated at 1,000,000. Thus the increase in population, which amounted to 1,588,837, was only 229,000 greater than the natural increase. A feature of this period was the rapid growth of population in Western Canada, partly the result of immigration and partly the result of an influx of people from Eastern Canada. During 1931-41, the population increase was just under 11 p.c. During the depressed conditions of the 1930's, marriage and birth rates were significantly lower and only 150,000 immigrants came to Canada, although, in addition, 75,000 Canadians returned from the United States. Emigration was also much lower than in the previous decades, amounting to an estimated 250,000. Natural increase was only 1,220,000, the crude birth rate falling from 27 per thousand of the population in the 1921-25 period to 24 per thousand in the succeeding five-year period and to 20 per thousand during much of the 1931-41 decade. During 1941-51, population growth was restored to pre-depression levels. Excluding Newfoundland which became part of Canada in 1949, it amounted to 19 p.c.; including Newfoundland it was 22 p.c. Much of the increase took place in the second half of the decade, reflecting heavy postwar immigration and a sharp rise in the marriage and birth rates.

GROWTH OF URBAN, RURAL AND TOTAL POPULATION CENSUSES 1901-61



In the 1951-61 period, the population growth rate at 30 p.c. came close to approaching the extremely high rate of the first decade of the century. However, the two periods contrast in many ways. In the early period there was a wider dispersal of population increases as whole regions across the Continent were opened up; in the recent period there was a concentration of growth in urban communities although some spreading of population into newly developed northern areas took place. Natural increase accounted for about 75 p.c. of the growth. While there was some decline in the death rate, the trend of natural increase reflected very closely that of the crude birth rate which began to rise during the War and remained high throughout the period. Net immigration accounted for the remainder of the increase; during the decade, 1,542,853 immigrants entered the country, more than double the estimated emigration. While all provinces gained in population during 1951-61, the rates of increase varied widely. The greatest increases resulted from a combination of natural increase and net migration which in the two large provinces of Central Canada and the two most westerly provinces accounted for over 87 p.c. of the total actual increase. In contrast, increases in the other six provinces were entirely accounted for by natural increase.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-61

NOTE.—Populations for the decennial census years 1871, 1881 and 1891 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131, and census populations for 1956 in the 1961 edition, p. 146.

Province or Territory	1901	1911	1921	1931	1941	1951	1961
NUMERICAL DISTRIBUTION							
Nfld.....	1	1	1	1	1	361,416	457,853
P.E.I.....	103,259	93,728	88,615	88,038	95,047	98,429	104,629
N.S.....	459,574	492,338	523,837	512,846	577,962	642,584	737,007
N.B.....	331,120	351,889	387,876	408,219	457,401	515,697	597,936
Que.....	1,648,898	2,005,776	2,360,510	2,874,662	3,331,882	4,055,681	5,259,211
Ont.....	2,182,947	2,527,292	2,933,662	3,431,683	3,787,655	4,597,542	6,236,092
Man.....	255,211	461,394	610,118	700,139	729,744	776,541	921,686
Sask.....	91,279	492,432	757,510	921,785	895,992	831,728	925,181
Alta.....	73,022	374,295	588,454	731,605	796,169	939,501	1,331,944
B.C.....	178,657	392,480	524,582	694,263	817,861	1,165,210	1,629,082
Y.T.....	27,219	8,512	4,157	4,230	4,914	9,096	14,628
N.W.T.....	20,129	6,507	8,143	9,316	12,028	16,004	22,998
Canada.....	5,371,315	7,206,643	8,787,949¹	10,376,786	11,506,655	14,009,429	18,238,247
PERCENTAGE CHANGE FROM PRECEDING CENSUS							
Nfld.....	1	1	1	1	1	1	26.7
P.E.I.....	-5.3	-9.2	-5.5	-0.7	8.0	3.6	6.3
N.S.....	2.0	7.1	6.4	-2.1	12.7	11.2	14.7
N.B.....	3.1	6.3	10.2	5.2	12.0	12.7	15.9
Que.....	10.8	21.6	17.7	21.8	15.9	21.7	29.7
Ont.....	3.2	15.8	16.1	17.0	10.4	21.4	37.6
Man.....	67.3	80.8	32.2	14.8	4.2	6.4	18.7
Sask.....	—	439.5	53.8	21.7	-2.8	-7.2	11.2
Alta.....	—	412.6	57.2	24.3	8.8	18.0	41.8
B.C.....	82.0	119.7	33.7	32.3	17.8	42.5	39.8
Y.T.....	—	-68.7	-51.2	1.8	16.2	85.1	60.8
N.W.T.....	-79.7	-67.7	25.1	14.4	29.1	33.1	43.7
Canada.....	11.1	34.2	21.9	18.1	10.9	21.8	30.2

¹ Populations of Newfoundland (not part of Canada until 1949) were: 1901, 220,984; 1911, 242,619; 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819.

² Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

2.—Factors in the Growth of Population, 1951-61

Province or Territory	Population 1951 Census	Births	Deaths	Natural Increase	Immigration	Actual Increase	Net Migration	Population 1961 Census
	No.	No.	No.	No.	No.	No.	No.	No.
Nfld.....	361,416	141,165	30,169	110,996	4,200	98,437	-14,559	457,853
P.E.I.....	98,429	26,990	9,369	17,621	1,451	6,200	-11,421	104,629
N.S.....	642,584	187,571	59,278	128,293	19,148	94,423	-33,870	737,007
N.B.....	515,697	165,299	45,838	119,461	9,718	82,239	-37,222	597,936
Que.....	4,055,681	1,348,440	350,140	998,300	325,329	1,203,530	205,230	5,259,211
Ont.....	4,597,542	1,426,211	472,718	953,493	817,292	1,638,550	685,057	6,236,092
Man.....	776,541	220,016	70,326	149,690	66,344	145,145	-4,545	921,686
Sask.....	831,728	238,998	66,674	172,324	30,715	93,453	-78,871	925,181
Alta.....	939,501	345,025	79,830	265,195	112,520	392,443	127,248	1,331,944
B.C.....	1,165,210	355,736	131,945	223,791	155,052	463,872	240,081	1,629,082
Y.T. and N.W.T.	25,100	12,889	3,855	9,034	1,084	12,526	3,492	37,626
Canada.....	14,009,429	4,468,340	1,320,142	3,148,198	1,542,853	4,228,815	1,080,620	18,238,247

Table 3 shows the natural increase and the total population increase for Canada and the provinces in the periods 1941-51, 1951-56 and 1956-61. The balance between the total increase in population and the natural increase during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for provinces indicate the net movement of population arising partly from inter-change of population between provinces and partly from persons entering and leaving the country.

3.—Numerical Changes in the Population of the Provinces through Natural Increase and Migration 1941-51, 1951-56 and 1956-61

Province	Natural Increase			Population Increase according to Census			Net Migration		
	1941-51	1951-56	1956-61	1941-51	1951-56	1956-61	1941-51	1951-56	1956-61
Nfld.....	...	51,851	59,145	...	53,658	42,779	...	+1,807	-16,366
P.E.I.....	15,802	8,959	8,662	3,382	856	5,344	-12,420	-8,103	-3,318
N.S.....	103,512	63,133	65,160	64,622	52,133	42,290	-38,890	-11,000	-22,870
N.B.....	99,904	59,774	59,687	58,296	38,919	43,320	-41,608	-20,855	-16,367
Que.....	736,058	476,627	521,673	723,799	572,697	630,833	-12,259	+96,070	+109,160
Ont.....	505,034	430,386	523,107	809,887	807,391	831,159	+304,853	+377,005	+308,052
Man.....	107,510	73,684	76,006	46,797	73,499	71,646	-60,713	-185	-4,360
Sask.....	135,106	86,030	86,294	-64,264	48,937	44,516	-199,370	-37,093	-41,778
Alta.....	150,303	120,961	144,234	143,332	183,615	208,828	-6,971	+62,654	+64,694
B.C.....	116,527	98,206	125,585	347,349	233,254	230,618	+230,822	+135,048	+105,033
Canada¹.....	1,972,394	1,473,211	1,674,987	2,141,358	2,071,362	2,157,456	+168,964	+598,151	+482,469

¹ Includes the Yukon and Northwest Territories.

The earlier movement of population in Canada from east to west has not been apparent since the 1920's. Although British Columbia has continued to show population gains from migration since 1931, much of this gain has been at the expense of the Prairie Provinces. While the three Prairie Provinces lost by migration about 267,000 persons between 1941 and 1951, they gained 25,000 in the period 1951-56 and 18,000 in the period 1956-61. Manitoba lost almost 61,000 people between 1941 and 1951 but only 5,000 persons since then. Saskatchewan has been a consistent loser since 1941, losing on the average almost 20,000 a year during the 1940's and around 8,000 a year during the 1950's. Alberta lost only about 7,000 in the decade 1941-51 and gained close to 65,000 in each of the five-year periods 1951-56 and 1956-61. British Columbia gained through migration at the rate of about 23,000 a year during the 1940's, about 27,000 a year in the first half of the 1950's and 21,000 annually in the 1956-61 period. On an absolute basis, Ontario received more

people through migration than did British Columbia but, in relation to its larger population, the gain was only about one third as important. Most of Ontario's growth through migration was from immigration rather than interprovincial movement of population. Quebec had a slight loss between 1941 and 1951 and a considerable gain in the next ten years, due also to immigration. The Maritimes as a whole lost 175,000 persons over the quarter-century.

Subsection 2.—Density of Population

Table 4 shows the density of population in the different provinces and territories of Canada in the census years 1951, 1956 and 1961. Omitting the Yukon and Northwest Territories where population density is exceedingly low, there were 8.66 persons per square mile in Canada as a whole in 1961 compared with 6.65 per square mile in 1951. The greatest increase in the ten years was shown by Ontario where there were 4.76 more persons per square mile, followed by Nova Scotia with an increase of 4.62. However, it should be remembered that all provinces with the exception of the Maritimes have large areas almost devoid of population and that concentrations in other areas are very high. The density of each county and census division is given in DBS Census Report 1.1-11 (Catalogue No. 92-540) and the density in each of the five largest metropolitan areas is shown on the insert facing p. 162.

4.—Land Area and Density of Population, by Province, Census Years 1951, 1956 and 1961

Province or Territory	Land Area	Population 1951		Population 1956		Population 1961	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
	sq. miles	No.	No.	No.	No.	No.	No.
Newfoundland (incl. Labrador).....	143,045	361,416	2.53	415,074	2.90	457,853	3.20
Prince Edward Island.....	2,184	98,429	45.07	99,285	45.46	104,629	47.91
Nova Scotia.....	20,402	642,584	31.50	694,717	34.05	737,007	36.12
New Brunswick.....	27,835	515,697	18.53	554,616	19.93	597,936	21.48
Quebec.....	523,860	4,055,681	7.74	4,628,378	8.84	5,259,211	10.04
Ontario.....	344,092	4,597,542	13.36	5,404,933	15.71	6,236,092	18.12
Manitoba.....	211,775	776,541	3.67	850,040	4.01	921,686	4.35
Saskatchewan.....	220,182	831,728	3.78	880,665	4.00	925,181	4.20
Alberta.....	248,800	939,501	3.78	1,123,116	4.51	1,331,944	5.35
British Columbia.....	359,279	1,165,210	3.24	1,398,464	3.89	1,629,082	4.53
Canada (Exclusive of the Territories).....	2,101,454	13,984,329	6.65	16,049,288	7.64	18,200,621	8.66
Yukon Territory.....	205,346	9,096	0.04	12,190	0.06	14,628	0.07
Northwest Territories.....	1,253,438	16,004	0.01	19,313	0.02	22,998	0.02
Canada.....	3,560,238	14,009,429	3.93	16,080,791	4.52	18,238,247	5.12

Subsection 3.—Rural and Urban Population

For the 1961 Census, all cities, towns and villages of 1,000 or more population, whether incorporated or not, were classed as urban; also classed as urban were the urbanized fringes of census metropolitan and other large urban areas, and the urbanized fringes of certain smaller cities where the city and fringe totalled 10,000 or more persons. The remainder of the population was classed as rural.

Table 5 classifies the 1961 rural population according to farm and non-farm residence and the urban population by size groups; in the latter classification, each municipality (or part) in an urbanized area is allocated to the same size group as the total urbanized area of which it forms a part. The figures show that, in 1961, almost 70 p.c. of Canada's population were urban dwellers and 53 p.c. lived in or on the fringes of urban centres having a population of 30,000 or more. Only about 12 p.c. lived on farms.

5.—Rural Population classified by Farm and Non-farm, and Urban Population classified by Size Group, by Province, Census 1961

Province or Territory	Rural			Urban				
	Farm ¹	Non-farm	Total	1,000 to 9,999	10,000 to 29,999	30,000 to 99,999	100,000 or Over	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	9,077	216,756	225,833	98,614	48,214	85,192	—	232,020
Prince Edward Island.....	34,514	36,206	70,720	15,591	18,318	—	—	33,909
Nova Scotia.....	56,832	279,663	336,495	75,163	49,065	—	276,284	400,512
New Brunswick.....	62,265	257,658	319,923	80,287	61,815	135,911	—	278,013
Quebec.....	564,826	787,981	1,352,807	606,355	277,549	384,628	2,637,872	3,906,404
Ontario.....	505,699	906,864	1,412,563	631,870	297,834	934,870	2,958,955	4,823,529
Manitoba.....	171,472	161,407	332,879	71,995	51,100	—	465,712	588,807
Saskatchewan.....	304,672	222,418	527,090	109,076	48,142	128,732	112,141	398,091
Alberta.....	285,823	202,910	488,733	158,319	44,096	35,454	605,342	843,211
British Columbia.....	77,540	369,617	447,157	161,256	152,978	—	867,691	1,181,925
Yukon Territory.....	47	9,560	9,597	5,031	—	—	—	5,031
Northwest Territories.....	18	14,042	14,060	8,938	—	—	—	8,938
Canada.....	2,072,785	3,465,072	5,537,857	2,022,495	1,049,111	1,704,787	7,923,997	12,700,390

¹ Excludes 55,615 persons living on farms in localities classed as urban.

Subsection 4.—Populations of Incorporated Urban Centres and Metropolitan Areas

The population of all incorporated urban centres is classified by size group in Table 6 for the census years 1951, 1956 and 1961. During the ten-year period, the number of such urban centres increased by 178 and the proportion of the total population living in them rose from 56.7 p.c. to 60.7 p.c. Although there was a slight decrease in the number of centres having fewer than 1,000 persons, the number with over 50,000 increased from 19 to 29 and the proportion of the total population in these larger centres went up from 27.5 p.c. to 29.0 p.c.; the proportion in centres of from 1,000 to 50,000 increased from 26.1 p.c. to 29.3 p.c. in the same comparison.

6.—Population of Incorporated Urban Centres, classified by Size Group, Census Years 1951, 1956 and 1961

Size Group	1951			1956			1961		
	Urban Centres	Population	P.C. of Total Population	Urban Centres	Population	P.C. of Total Population	Urban Centres	Population	P.C. of Total Population
	No.	No.		No.	No.		No.	No.	
Over 500,000.....	2	1,697,274	12.1	2	1,777,145	11.1	2	1,863,469	10.2
Between—									
400,000 and 500,000..	—	—	—	—	—	—	—	—	—
300,000 and 400,000..	1	344,833	2.5	1	365,844	2.3	1	384,522	2.1
200,000 and 300,000..	3	646,076	4.6	4	942,840	5.9	5	1,338,294	7.3
100,000 and 200,000..	4	572,756	4.1	4	576,156	3.6	4	568,056	3.1
50,000 and 100,000..	9	588,436	4.2	12	769,323	4.8	17	1,134,214	6.2
25,000 and 50,000..	24	802,380	5.7	27	929,624	5.8	41	1,431,909	7.9
15,000 and 25,000..	34	636,713	4.5	43	853,341	5.3	43	862,101	4.7
10,000 and 15,000..	29	347,410	2.5	44	527,802	3.3	61	743,474	4.1
5,000 and 10,000..	100	720,077	5.1	117	830,289	5.2	132	932,936	5.1
3,000 and 5,000..	119	457,492	3.3	130	497,818	3.1	161	579,201	3.2
1,000 and 3,000..	409	698,092	5.0	450	772,013	4.8	465	793,465	4.4
Under 1,000.....	1,049	429,683	3.1	1,039	443,922	2.8	1,039	437,207	2.4
Totals.....	1,783	7,941,222	56.7	1,873	9,286,126	57.7	1,961	11,068,848	60.7

The Canadian cities having a population of over 50,000 in 1961 are listed in Table 7. Included also are the years of their incorporation as cities and comparative figures for 1951 and 1956 which are given according to the city boundaries at these respective dates.

7.—Incorporated Cities with Populations of Over 50,000 at the 1961 Census, with Comparable Data for 1951 and 1956

NOTE.—The asterisk (*) indicates a boundary change since the preceding census. Population totals are based on areas as incorporated at each of these dates.

City and Province	Year of Incorporation as City	1951	1956	1961
		No.	No.	No.
Brantford, Ont.....	1877	36,727	51,869*	55,201*
Calgary, Alta.....	1893	129,060	181,780*	249,641*
Edmonton, Alta.....	1904	159,631	226,002*	281,027*
Halifax, N.S.....	1841	85,589	93,301	92,511
Hamilton, Ont.....	1846	208,321	239,625*	273,991*
Hull, Que.....	1875	43,483	49,243*	56,929*
Kingston, Ont.....	1846	33,459	48,618*	53,526
Kitchener, Ont.....	1912	44,867	59,562*	74,485*
London, Ont.....	1855	95,343	101,693*	169,569*
Montreal, Que.....	1832	1,021,520	1,109,439*	1,191,062*
Oshawa, Ont.....	1924	41,545	50,412	62,415
Ottawa, Ont.....	1854	202,045	222,129	268,206
Quebec, Que.....	1832	164,016	170,703	171,979
Regina, Sask.....	1903	71,319	89,755*	112,141*
Saint John, N.B.....	1785	50,779	52,491	55,153
St. Catharines, Ont.....	1876	37,984	39,708*	84,472*
St. John's, Nfld.....	1888	52,873	57,078	63,632
St. Michel, Que.....	1952	10,539	24,706	55,978
Sarnia, Ont.....	1914	34,697	43,447	50,976
Saskatoon, Sask.....	1906	53,268	72,858*	95,526*
Sherbrooke, Que.....	1875	50,543	58,668*	66,554
Sudbury, Ont.....	1930	42,410	46,482	80,120*
Toronto, Ont.....	1834	675,754	667,706*	672,407
Trois Rivières, Que.....	1857	46,074	50,483*	53,477*
Vancouver, B.C.....	1886	344,833	365,844*	384,522
Verdun, Que.....	1912	77,391	78,262*	78,317
Victoria, B.C.....	1862	51,331	54,584	54,941
Windsor, Ont.....	1892	120,049	121,980	114,367*
Winnipeg, Man.....	1873	235,710	255,093*	265,429*

Census metropolitan areas have been established for groups of urban communities that are in close economic, geographic and social relationship. Table 8 shows the 1961 population of each area with the corresponding 1951 and 1956 figures for the same area as in 1961. As indicated by the last column, most of these metropolitan areas have shown remarkable increases in population during the decade. In 1961 they accounted for 44.8 p.c. of the total population as compared with 40.2 p.c. in 1951.

8.—Populations of Census Metropolitan Areas, 1951, 1956 and 1961

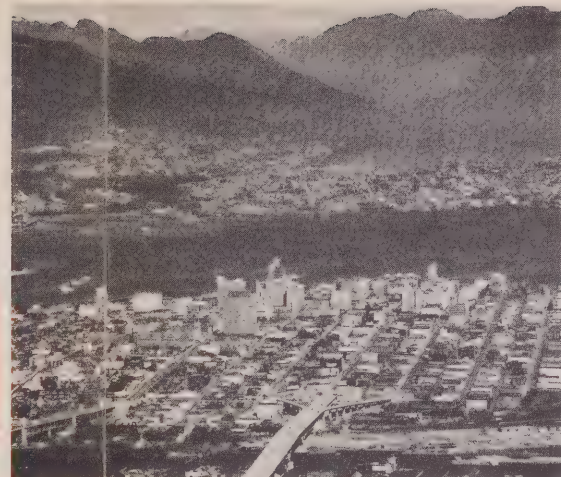
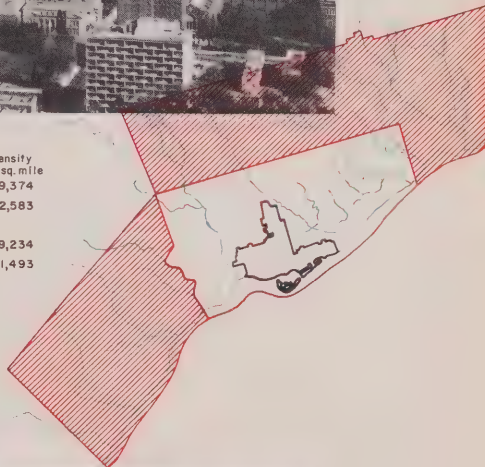
(Areas as of 1961)

Census Metropolitan Area	1951	1956	1961	P.C. Increase 1951-61
	No.	No.	No.	
Calgary, Alta.....	142,315	201,022	279,062	96.1
Edmonton, Alta.....	176,782	254,800	337,568	91.0
Halifax, N.S.....	133,931	164,200	183,946	37.3
Hamilton, Ont.....	280,293	338,294	395,189	41.0
Kitchener, Ont.....	107,474	128,722	154,864	44.1
London, Ont.....	128,977	154,453	181,283	40.6
Montreal, Que.....	1,471,851	1,745,001	2,109,509	43.3
Ottawa, Ont.....	292,476	345,460	429,750	46.9
Quebec, Que.....	276,242	311,604	357,568	29.4
Saint John, N.B.....	78,337	86,015	95,563	22.0
St. John's, Nfld.....	68,620	79,153	90,838	32.4
Sudbury, Ont.....	73,826	97,945	110,694	49.9
Toronto, Ont.....	1,210,353	1,502,253	1,824,481	50.7
Vancouver, B.C.....	561,960	665,017	790,165	40.6
Victoria, B.C.....	113,207	133,829	154,152	36.2
Windsor, Ont.....	163,618	185,865	193,365	18.2
Winnipeg, Man.....	356,813	412,248	475,989	33.4



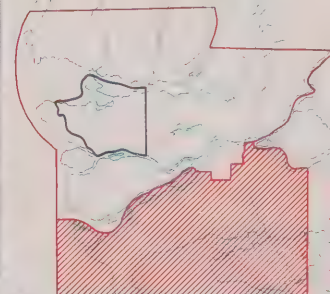
TORONTO

	Population	Density per sq. mile
1951		
CITY PROPER	675,754	19,374
FRINGE AREA	534,599	2,583
1961		
CITY PROPER	672,407	19,234
FRINGE AREA	1,152,074	1,493



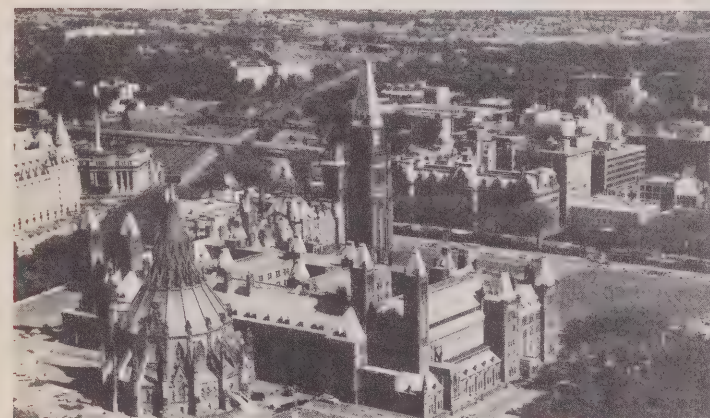
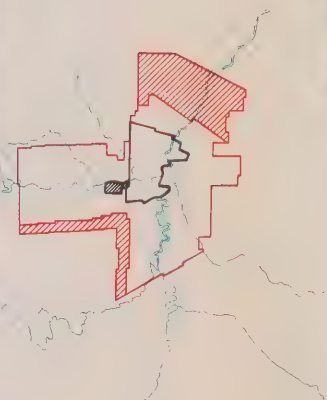
VANCOUVER

	Population	Density per sq. mile
1951		
CITY PROPER	344,833	7,891
FRINGE AREA	217,127	767
1961		
CITY PROPER	384,522	8,298
FRINGE AREA	405,643	872



WINNIPEG

	Population	Density per sq. mile
1951		
CITY PROPER	235,710	9,428
FRINGE AREA	121,103	645
1961		
CITY PROPER	265,429	10,803
FRINGE AREA	210,560	879



OTTAWA

	Population	Density per sq. mile
1951		
CITY PROPER	202,045	4,446
FRINGE AREA	90,431	2,475
1961		
CITY PROPER	268,206	5,902
FRINGE AREA	161,544	558

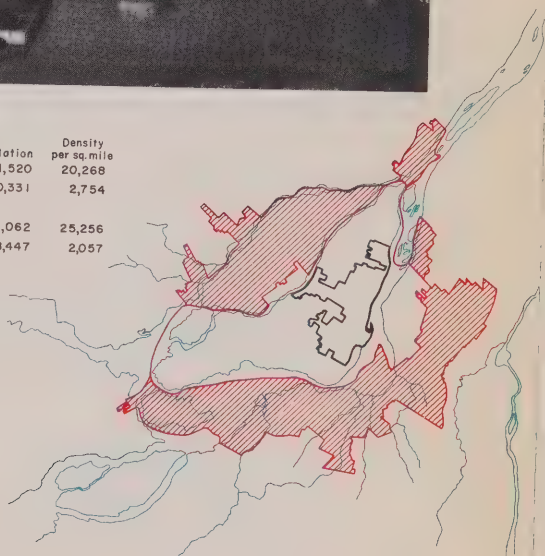


GROWTH OF CANADA'S FIVE LARGEST METROPOLITAN AREAS 1951 - 1961







MONTREAL

	Population	Density per sq. mile
1951		
CITY PROPER	1,021,520	20,268
FRINGE AREA	450,331	2,754
1961		
CITY PROPER	1,191,062	25,256
FRINGE AREA	918,447	2,057



LEGEND

- Outline of City Proper,
1951 
- Growth of City Proper,
1951-61 
- Outline of fringe area,
1951 
- Growth of fringe area,
1951-61 

The 922 incorporated urban centres in Canada having a population of 1,000 or more at the time of the 1961 Census are listed alphabetically by province in Table 9 and their populations given for the two census years 1956 and 1961. Each population figure is for the boundary in effect at the time of the respective census.

9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961, by Province, Census Years 1956 and 1961

NOTE.—Population totals are based on areas as incorporated at each of these dates; a change in municipal boundary since the preceding census is indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: c. = city, t. = town, and v. = village.

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Newfoundland—			Nova Scotia—concluded		
Bay Roberts, t.....	1,306	1,328	Louisburg, t.....	1,314	1,417
Botwood, t.....	1	3,680	Lunenburg, t.....	2,859	3,056
Burgeo, t.....	1,138	1,454	Malene Bay, t.....	1,109	1,103
Burin, t.....	1,116	1,144	Middleton, t.....	1,769	1,921
Carbonear, t.....	3,955	4,234	Mulgrave, t.....	1,227	1,145
Catalina, t.....	1	1,110	New Glasgow, t.....	9,998	9,782
Channel-Port aux Basques, t.....	3,320	4,141	New Waterford, t.....	10,381	10,592
Clarenville, t.....	1,195	1,541	North Sydney, t.....	8,125	8,657
Corner Brook, c.....	23,225	25,185	Oxford, t.....	1,545	1,471
Dear Lake, t.....	3,481	3,998	Parrsboro, t.....	1,849	1,834
Fogo, t.....	1,184	1,152	Pictou, t.....	4,564	4,534
Fortune, t.....	1,194	1,360	Port Hawkesbury, t.....	1,078	1,346*
Freshwater, t.....	1,048	1,396	Shelburne, t.....	2,337	2,408
Gander, t.....	1	5,725	Springhill, t.....	7,348	5,836
Glovertown, t.....	604	1,197*	Stellarton, t.....	5,445	5,327
Grand Bank, t.....	2,430	2,703*	Stewiacke, t.....	1,024	1,042
Harbour Breton, t.....	1	1,076	Sydney, c.....	32,162	38,617
Harbour Grace, t.....	2,545	2,650	Sydney Mines, t.....	8,731	9,122
Lewisporte, t.....	2,076	2,702	Trenton, t.....	3,240	3,140
Marystown, t.....	1,460	1,691	Truro, t.....	12,250	12,421
Mount Pearl, t.....	1,979	2,785	Westville, t.....	4,247	4,159
Placentia, t.....	1,233	1,610	Windsor, t.....	3,661	3,823
St. Anthony, t.....	1,761	1,829	Wolfville, t.....	2,497	2,413
St. John's, c.....	57,078	63,633	Yarmouth, t.....	8,095	8,636
St. Lawrence, t.....	1,837	2,095			
Stephenville, t.....	3,762	6,043			
Stephenville Crossing, t.....	1	2,209			
Wabana, t.....	7,873*	8,026			
Wesleyville, t.....	1,313	1,285			
Windsor, t.....	4,520	5,505			
Prince Edward Island—			New Brunswick—		
Charlottetown, c.....	16,707	18,318*	Bathurst, t.....	5,267	5,494*
Montague, t.....	1,152	1,126	Campbellton, c.....	8,389	9,873*
Parkdale, v.....	1,422	1,735	Chatham, t.....	6,332	7,109
St. Eleanors, v.....	1	1,002	Dalhousie, t.....	5,468	5,856
Sherwood, v.....	1	1,580	Dieppe, t.....	3,876*	4,032
Souris, t.....	1,449	1,537	Edmundston, c.....	11,997	12,791
Summerside, t.....	7,242	8,611	Fredericton, c.....	18,303	19,683
Nova Scotia—			Grand Falls, t.....	3,672	3,983
Amherst, t.....	10,301	10,788	Lancaster, c.....	1,022	1,025
Antigonish, t.....	3,592*	4,344	Marystown, t.....	12,371	13,848
Berwick, t.....	1,134	1,282	Marysville, t.....	2,538	3,233
Bridgetown, t.....	1,041	1,043	Milltown, t.....	1,975	1,892
Bridgewater, t.....	4,445	4,497	Newcastle, c.....	36,003*	43,840*
Canso, t.....	1,261	1,151	Newcastle, t.....	4,670	5,236
Dartmouth, c.....	21,093	46,966*	Oranmore, t.....	661	12,170*
Digby, t.....	2,145*	2,308	St. Andrews, t.....	1,534	1,531
Dominion, t.....	2,964	2,999	St. George, t.....	1,322	1,133
Glace Bay, t.....	24,416	24,186	Saint John, c.....	52,491	55,153
Halifax, c.....	93,301	92,511	St. Leonard, t.....	1,593	1,666
Hantsport, t.....	1,298	1,381	St. Stephen, t.....	3,491	3,380*
Inverness, t.....	2,026	2,109	Sackville, t.....	2,849	3,038
Kentville, t.....	4,937*	4,612	Shediac, t.....	2,173	2,159
Liverpool, t.....	3,500	3,712*	Shippeigan, t.....	1,362	1,631
Lockeport, t.....	1,207	1,231	Sussex, t.....	3,403	3,457
			Woodstock, t.....	4,308	4,305
			Quebec—		
			Acton Vale, t.....	3,547	3,957
			Alma, c.....	10,822*	13,309*
			Amos, t.....	5,145	6,080
			Amqui, v.....	3,247	3,659

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—continued**

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Quebec—continued			Quebec—continued		
Anjou, t.....	2,140	9,511	Disraeli, v.....	2,473	3,079
Arthabaska, t.....	2,399*	2,977	Dolbeau, t.....	5,079	6,052
Arvida, c.....	12,919	14,460	Dollard des Ormeaux, t.....	1	1,248
Asbestos, t.....	8,969*	11,083*	Donnacona, t.....	4,147	4,812*
Auteuil, t.....	1	2,603	Dorion, t.....	3,089*	4,996*
Ayersville, v.....	2,348	2,957	Dorval, c.....	14,055*	18,592*
Aylmer, t.....	5,294	6,286	Drummondville, c.....	26,284*	27,909*
Bagotville, t.....	4,822	5,629	Drummondville W., v.....	1,606	2,057
Baie Comeau, t.....	4,332	7,950*	Duvernay, t.....	1	10,939
Baie de Shawinigan, v.....	1,137	1,085	East Angus, t.....	4,239	4,756
Baie d'Urifé, t.....	1,838*	3,549	East Broughton Station, v.....	1,060	1,136
Baie St. Paul, v.....	4,052	4,674	Fabreville, t.....	1	5,213*
Barraute, v.....	1,081	1,199	Farnham, c.....	5,843*	6,354
Beaconsfield, t.....	5,496	10,064	Ferme Neuve, v.....	1,891	1,971
Beauceville, t.....	1,459*	1,645*	Forestville, t.....	1,117	1,529
Beauceville E., t.....	1,740*	1,920	Fort Chambly, t.....	1,885	1,987
Beauharnois, c.....	6,774	8,704*	Fort Coulonge, v.....	1,633	1,823
Beauport, t.....	6,735*	9,192*	Gagnon, t.....	1	1,900
Beaupré, v.....	2,381	2,587	Gaspé, t.....	2,194	2,603
Bedford, t.....	2,272	2,855*	Gatineau, t.....	8,423	13,022*
Beebe Plain, v.....	1,363	1,363	Giffard, c.....	9,964	10,129*
Beloil, t.....	3,966*	6,283	Girard, c.....	27,095*	31,463*
Bernierville, v.....	2,431	2,708	Granby, c.....	1,024	1,176
Berthierville, t.....	3,504	3,708*	Grande Rivière, v.....	14,023	15,806
Bio, v.....	1,142	1,177	Grand Mère, c.....	4,417	7,807*
Black Lake, t.....	3,685	4,180	Greenfield Park, t.....	1,277	1,330
Bois des Filon, v.....	1,048	2,499	Grenville, v.....	4,355	4,557
Boucherville, t.....	3,911*	7,403	Hampstead, t.....	1,762*	5,980
Bourlamaque, t.....	3,018	3,344	Hauterive, t.....	1,214	1,257
Bromptonville, t.....	2,316	2,726	Hébertville Station, v.....	1,549	1,671
Brossard, t.....	1	3,778	Hudson, v.....	1,289	1,540
Brownsburg, v.....	3,412	3,617	Hudson Heights, v.....	49,243*	56,929*
Buckingham, t.....	6,781*	7,421*	Hull, c.....	2,995*	3,134
Cabano, v.....	2,350	2,695	Huntingdon, t.....	6,270	7,588
Cadillac, t.....	1,281	1,077	Iberville, t.....	2,600	3,106
Campbell's Bay, v.....	1,029	1,024	Île Perrot, t.....	1,761*	2,070
Candiac, t.....	1	1,050	Isle Maligne, t.....	33,132	40,807*
Cap Chat, v.....	1,954	2,035	Jacques Cartier, c.....	16,940*	18,088
Cap de la Madeleine, c.....	22,943	26,925	Joliette, c.....	25,550*	28,588*
Causapsal, v.....	2,957	3,463*	Jonquière, c.....	11,309*	11,816
Chambly, t.....	2,817	3,737*	Kénogami, c.....	1,328	1,396
Chambord, v.....	1,091	1,188	Knowlton, v.....	1,150	1,224
Chandler, t.....	3,338*	3,406	Labelle, v.....	1,681	1,548
Chapais, t.....	380	2,363	Lac au Saumon, v.....	1	2,297
Charlemagne, v.....	2,428	3,068	Lac Etchemin, v.....	1	1,556
Charlesbourg, c.....	8,202	14,308*	Lachine, c.....	34,494	38,630*
Charny, v.....	3,639	4,189	Lachute, t.....	6,911	7,560
Château d'Eau, t.....	918	1,057	Lac Mégantic, t.....	6,864	7,015
Châteauguay, t.....	3,265	7,570	Lacolle, v.....	1,141	1,187
Châteauguay Centre, t.....	1	7,591	Lafèche, c.....	9,958	10,984*
Châteauguay Heights, t.....	1,146	1,231	Lafontaine, v.....	1	1,556
Chibougamau, t.....	1,262	4,765	La Guadeloupe, v.....	1,487	1,728
Chicoutimi, c.....	24,878*	31,657*	La Malbate, t.....	2,817	2,580
Chicoutimi N., c.....	6,446*	11,220*	L'Annonciation, v.....	783*	1,042*
Chomedey, c. ⁸	16,677	30,445	La Pêrade, v.....	1,282	1,184
Chute aux Outardes, v.....	923	1,336	La Petite Rivière, t.....	1,353	4,707
Clermont, v.....	2,628	3,114	La Prairie, t.....	5,372	7,323*
Coaticook, t.....	6,462	6,906	La Providence, v.....	3,826*	4,251
Contrecoeur, v.....	1,662	2,007	LaSalle, c.....	18,973	30,904
Cookshire, t.....	1,315*	1,412	LaSalle, c.....	3,155*	3,944
Côte St. Luc, c.....	5,914*	18,266*	LaSalle, c.....	3,683	4,448*
Courville, t.....	3,772	4,670	L'Assomption, t.....	986	1,032
Cowansville, t.....	5,242	7,050*	La Station du Coteau, v.....	11,096	13,023
Crabtree, v.....	1,103	1,313	La Tuque, t.....	1,513	1,698*
Danville, t.....	2,296	2,592	Laurentides, t.....	10,255	11,533
Delson, t.....	815	2,075*	Lauzon, c.....	11,248	19,227*
Desbiens, t.....	2,014	1,870	Laval des Rapides, t.....	3,818	5,440*
Deschailons sur St. Laurent, v.....	1,266	1,283	Lavaltrie, v.....	917	1,034
Deschambault, v.....	1,002	1,056	LeMoyne, t.....	5,662	8,057*
Deschênes, v.....	1,680	2,090	Lennoxville, t.....	3,149	3,699
			L'Épiphanie, v.....	2,671	2,663

For footnotes, see end of table, p. 169.

9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—continued

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Quebec—continued			Quebec—continued		
Léry, t.	1,573	1,957	Rimouski E., v.	1,209	1,581
Les Saules, t.	1,396	4,098	Rivière des Prairies, t.	6,806	10,054*
Lévis, c.	13,644	15,112	Rivière du Loup, c.	9,964	10,835
Liniers, v.	1,149	1,269	Rivière du Moulin, v.	4,138	4,386
L'Isletville, v.	1,051	1,184	Robertsonville, v.	1,030	1,156
L'Isle Verte, v.	1,456	1,517	Roberval, c.	6,648	7,739*
Longueuil, c.	14,332	24,131*	Rock Island, t.	1,608	1,608*
Loretteville, t.	4,957	6,522	Rosemere, t.	1	6,158
Louiseville, t.	4,392	4,138	Rouyn, c.	17,076*	18,716*
Luceville, v.	4,265	1,419	Roxboro, t.	1,910*	6,298*
Macamio, t.	1,388	1,614	Ste. Adèle, v.	1,309	1,331
Magog, c.	12,720*	13,139	St. Agapitville, v.	1,079	1,117
Malartic, t.	6,818	6,998	Ste. Agathe des Monts, t.	5,173	5,725
Maniwaki, t.	5,399*	6,349	St. Ambroise, v.	1,305	1,576
Maple Grove, t.	1,115	1,412	St. André Avellan, v.	923	1,066
Marieville, t.	3,478*	3,809	St. André E., v.	1	1,183
Masson, v.	1,856	1,933	Ste. Anne de Beauré, v.	1,865	1,878
Matane, t.	8,069	9,190*	Ste. Anne de Bellevue, t.	3,647	4,044
McMasterville, v.	1,738	2,075*	Ste. Anne de la Pocatière, v.	1	3,086
Melocheville, v.	1,422	1,666	St. Anselme, v.	1,086	1,131
Mistassini, t.	2,912	3,461	St. Antoine des Laurentides, v.	2,092	3,005
Montbello, v.	1,287	1,486*	St. Basile S., v.	1,635*	1,709
Mont Joli, t.	6,179	6,178*	St. Bruno, v.	913	1,158
Mont Laurier, t.	5,486	5,859	St. Bruno de Montarville, t.	1	6,760
Montmagny, t.	6,406	6,855	St. Casimir, v.	1,447	1,886
Montmorency, t.	6,077*	5,985	St. Césaire, v.	1,739	2,097
Montreal, c.	1,109,439*	1,191,062*	St. Coeur de Marie, v.	1,282	1,302
Montreal E., t.	4,607	5,884	St. Croix, v.	1,241	1,363
Montreal N., c.	25,407	48,483	St. Cyrille, v.	1,198	1,138
Montreal W., t.	4,870*	6,446	St. Denis, v.	944	1,063
Mount Royal, t.	16,990*	21,182	St. Dorothee, t.	1,158	5,297*
Murdochville, t.	1,694	2,951	St. Elzéar, t.	2,589	4,150
Napierville, v.	1,510*	1,812	St. Emile, v.	1,645	1,806
Naudville, t.	2,894*	4,475	St. Eustache, t.	3,740*	6,463*
Nicolet, t.	3,771	4,441*	St. Eustache sur le Lac, t.	5,830*	7,274
Noranda, c.	10,323	11,477*	St. Félix, t.	4,152*	5,133
Normandin, v.	1,918	1,838	St. Félicité, v.	812	1,057
Notre Dame de Lorette, v.	3,464	3,961	St. Félix de Valois, v.	1,323	1,399
Notre Dame d'Hébertville, v.	1,542	1,604	St. Foy, c.	14,615	29,716*
Notre Dame de Portneuf, v.	1,251	1,380	St. François, t.	1	5,122*
Notre Dame du Lac, v.	1,512	1,695	St. Fulgence, v.	1,054	1,094
Ormeville, v.	907	1,094	St. Gabriel de Brandon, v.	3,265*	3,425
Ornstonville, t.	1,347	1,527	St. Geneviève, t.	2,041	2,397
Orsainville, t.	1	4,236	St. Georges (Beauce Co.), t.	3,197	4,082*
Outremont, c.	29,990	30,753	St. Georges (Champlain Co.), v.	1,454*	1,775
Papineauville, v.	1,141	1,300	St. Georges W., t.	3,648	4,755*
Parent, v.	1,443	1,298	St. Germain de Grantham, v.	919	1,015
Pierrefonds, t.	1	12,171*	St. Hilaire, v.	2,000	2,911
Pierreville, v.	1,589	1,559	St. Honoré, v.	891	1,009
Pincourt, t.	1,437	2,685	St. Hubert, t.	1	14,380
Plessisville, t.	5,829	6,570	St. Hyacinthe, c.	20,439*	22,354
Pointe au Pic, v.	1,220	1,333	St. Jacques, v.	1,979	2,038
Pointe aux Trembles, c.	11,981	21,926	St. Jean, c.	24,367*	26,988
Pointe Claire, c.	15,205*	22,709	St. Jean de Boischatel, v.	1,461	1,576
Pointe Gatineau, t.	6,175	8,854	St. Jean Eudes, v.	2,560	2,873
Pont Rouge, v.	2,631	2,988	St. Jérôme (Lac St. Jean Co.), v.	1,505	1,962
Pont Viat, c.	8,218	16,077*	St. Jérôme (Terrebonne Co.), c.	20,645	24,546*
Port Alfred, t.	7,968*	9,066*	St. Joseph (Beauce Co.), v.	2,484	2,484
Port Cartier, t.	1	3,458	St. Joseph (St. Hyacinthe Co.), v.	2,703	3,799
Prévile, t.	496	1,001	St. Joseph de la Rivière Bleue, v.	1,481	1,540
Price, v.	3,140	3,094	St. Joseph de Sorel, t.	3,571	3,588
Princeville, v.	2,841	3,174	St. Jovite, v.	1,613	2,692*
Quebec, c.	170,703	171,979	St. Lambert, c.	12,224	14,531
Quebec W., t.	7,945	8,733	St. Laurent, c.	38,291*	49,805*
Rawdon, v.	2,049	2,388	St. Léonard de Port Maurice, t.	925	4,893
Repentigny, t.	1	9,139	St. Marc des Carrières, v.	2,457	2,622
Richelieu, v.	1,398	1,612	Ste. Marie, t.	3,094	3,662
Richmond, t.	3,849	4,072	St. Michel, c.	24,706	55,978
Rigaud, t.	1,784	1,990	St. Noël, v.	1,027*	1,124
Rimouski, t.	14,630	17,739	St. Pacôme, v.	1,283	1,242

For footnote, see end of table, p. 169.

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—continued**

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Quebec—concluded			Ontario—continued		
St. Pascal, v.....	1,962	2,144	Almonte, t.....	2,960	3,267
St. Pie, v.....	1,228	1,434	Amherstburg, t.....	4,099	4,452
St. Pierre, t.....	5,276*	6,795*	Arnprior, t.....	5,137*	5,474
St. Raphaël, v.....	1,059	1,134	Arthur, v.....	1,124	1,200
St. Raymond, t.....	3,502	3,931	Athens, v.....	935	1,015
St. Rédempteur, v.....	872	1,035*	Aurora, t.....	3,957	8,791*
St. Rémi, t.....	2,303	2,276	Aylmer, t.....	4,201*	4,705*
Ste. Rosalie, v.....	1,142*	1,255	Ayr, v.....	939	1,016
Ste. Rose, t.....	5,378*	7,571*	Bancroft, v.....	1,669*	2,615*
St. Sauveur des Monts, v.....	1,316*	1,702*	Barrie, c.....	16,851*	21,169*
St. Siméon, v.....	1,114	1,197	Barry's Bay, v.....	1,366	1,439
Ste. Thècle, v.....	1,499	2,009*	Beamsville, v.....	2,198	2,537
Ste. Thérèse, c.....	8,266	11,771*	Beaverton, v.....	1,099	1,217
St. Timothée, v.....	688	1,003	Belle River, v.....	1,814*	1,854
St. Tite, t.....	3,183	3,250	Belleville, c.....	20,605	30,655*
St. Ulric, v.....	980	1,021	Blenheim, t.....	2,844	3,151*
St. Vincent de Paul, t.....	6,784	11,214	Blind River, t.....	3,633*	4,093*
St. Zacharie, v.....	1	1,361	Bobcaygeon, v.....	1,242	1,210
Sacré Cœur de Jésus, v.....	896	1,108	Bolton, v.....	1,093	2,104
Sayabec, v.....	2,281	2,314	Bowmanville, t.....	6,544	7,937*
Schefferville, t.....	1,632	3,178	Bracebridge, t.....	2,849	2,927
Scotstown, t.....	1,347	1,038	Bradford, t.....	2,010	2,342
Senneterre, t.....	2,197	3,246*	Brampton, t.....	12,587*	18,467*
Sennerville, v.....	979	1,262	Brantford, c.....	51,869*	55,201*
Sept Îles, c.....	5,592	14,196*	Bridgeport, v.....	1,402	1,672*
Shawbridge, v.....	680	1,034	Brighton, v.....	2,182	2,403
Shawinigan, c.....	28,597*	32,169*	Brockville, t.....	13,885*	17,744*
Shawinigan S., v.....	10,947*	12,683	Burlington, t.....	9,127*	47,008*
Shawville, v.....	1,281	1,534	Caledonia, t.....	2,078*	2,198
Sherbrooke, c.....	58,668*	66,554	Campbellford, t.....	3,425	3,475
Sillery, c.....	13,154	14,109*	Cannington, v.....	926	1,024
Sorel, c.....	16,476	17,147	Capreol, t.....	2,394	3,003*
Stanstead Plain, v.....	1,134	1,116	Cardinal, v.....	1,994	1,944
Sutton, v.....	1,407	1,755*	Carleton Place, t.....	4,790*	4,796
Tadoussac, v.....	1,066	1,083	Casselman, v.....	1,241	1,271
Temiscaming, t.....	2,694	2,517	Chalk River, v.....	986	1,135
Templeton, v.....	2,475	2,965	Chatham, c.....	22,262*	29,826*
Terrebonne, t.....	4,097	6,207*	Chelmsford, t.....	2,142*	2,559*
Thetford Mines, c.....	19,511*	21,618	Chesley, t.....	1,629	1,697
Thurso, v.....	2,324	3,310	Chesterville, v.....	1,169	1,248
Tracy, t.....	6,542	8,171	Chippawa, v.....	2,039*	3,256
Tring Junction, v.....	1,083*	1,214	Clinton, t.....	2,896*	3,491*
Trois Pistoles, t.....	4,039	4,349	Cobalt, t.....	2,367*	2,209
Trois Rivières, c.....	50,483*	53,477*	Cobourg, v.....	9,399	10,646*
Val David, v.....	1,016	1,118*	Cochrane, t.....	3,695	4,521*
Val d'Or, t.....	9,876	10,983*	Colborne, v.....	1,240	1,336
Vallée Junction, v.....	1,340*	1,405	Collingwood, t.....	7,978	8,385
Valleyfield (Salaberry de), c.....	23,584*	27,297*	Coniston, t.....	2,478	2,692*
Val St. Michel, t.....	1,140	1,290	Copper Cliff, t.....	3,801*	3,600
Varennnes, v.....	2,047	2,240*	Cornwall, c.....	18,158	43,639*
Verchères, v.....	1,412	1,768	Crystal Beach, v.....	1,850	1,886
Verdun, c.....	78,262*	78,317	Deep River, t.....	1	5,377
Victoriaville, t.....	16,031*	18,720*	Delhi, t.....	3,002*	3,427*
Ville Marie, v.....	1,409	1,710	Deseronto, t.....	1,729	1,797
Villeneuve, t.....	1,417	1,934	Dresden, t.....	2,260	2,346
Warwick, t.....	2,248	2,487	Dryden, t.....	4,428*	5,728*
Waterloo, t.....	4,266	4,543	Dundas, t.....	9,507*	12,912*
Waterville, v.....	1,373	1,330	Dunnville, t.....	4,776*	5,181
Weedon Centre, v.....	1,287	1,426	Durham, t.....	2,067	2,180
Westmount, c.....	24,800	25,012	Eastview, t.....	19,283	24,555
Windsor, t.....	5,886*	6,589	Eganville, v.....	1,598	1,549
Yamachiche, v.....	900	1,186*	Elmira, t.....	2,916*	3,337*
			Elora, v.....	1,457	1,486
			Englehart, t.....	1,705	1,786
			Erin, v.....	885	1,005
			Espanola, t.....	1	5,353
Ontario—				3,348	3,428
Acton, t.....	3,578*	4,144*	Exeter, t.....	2,655	3,047
Ajax, t.....	5,683	7,755	Fenelon Falls, v.....	1,137	1,359
Alexandria, t.....	2,487	2,597*	Fergus, t.....	3,677	3,831
Alfred, v.....	1,257	1,195			
Alliston, t.....	2,426*	2,884*			

For footnotes, see end of table, p. 169.

9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—continued

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
No.	No.	No.	No.	No.	No.
Ontario—continued			Ontario—continued		
Fonthill, v.....	1,872	2,324*	New Toronto, t.....	11,560	13,384
Forest, t.....	2,035	2,188	Niagara, t.....	2,740	2,712
Forest Hill, v.....	19,480	20,489	Niagara Falls, c.....	23,563	22,351
Fort Erie, t.....	8,632	9,027*	North Bay, c.....	21,020*	23,781
Fort Frances, t.....	9,005	9,481	Norwich, v.....	1,611	1,703
Fort William, c.....	39,464	45,214	Norwood, v.....	1,017	1,060
Frankford, v.....	1,491	1,642	Oakville, t.....	9,983	10,366
Galt, c.....	23,738*	27,830*	Orangeville, t.....	3,887	4,593
Gananoque, t.....	4,981	5,096	Orillia, t.....	13,857	15,345*
Georgetown, t.....	5,942*	10,298	Oshawa, c.....	50,412	62,415
Geraldton, t.....	3,263	3,375	Ottawa, c.....	222,129	268,200*
Glencoe, v.....	1,044	1,156	Owen Sound, c.....	16,976	17,421*
Goderich, t.....	5,886*	6,411	Palmerston, t.....	1,550	1,554
Gravenhurst, t.....	3,014	3,077	Paris, t.....	5,504*	5,820*
Grimsby, t.....	3,805*	5,148*	Parkhill, t.....	1,043	1,169
Guelph, c.....	33,860*	39,838*	Parry Sound, t.....	5,378	6,004*
Hagersville, v.....	1,964	2,075	Pembroke, t.....	15,434	16,791*
Halleybury, t.....	2,654	2,638	Penetanguishene, t.....	5,420	5,340
Hamilton, c.....	239,625*	273,991*	Perth, t.....	5,145*	5,360
Hanover, t.....	3,943	4,401*	Petawawa, v.....	1,509	1,509
Harriston, t.....	1,592	1,631	Peterborough, c.....	42,698*	47,185*
Harrow, t.....	1,851	1,787	Petrolia, t.....	3,426	3,708
Havelock, v.....	1,205	1,260	Pickering, v.....	1,150	1,755
Hawkesbury, t.....	7,929	8,661	Pictou, t.....	4,998	4,862
Hearst, t.....	2,214	2,373	Point Edward, v.....	2,558	2,744
Hespeler, t.....	3,876*	4,519*	Port Arthur, c.....	38,136	45,276
Huntsville, t.....	3,051	3,189	Port Colborne, t.....	14,028*	14,886*
Ingersoll, t.....	6,811	6,874	Port Credit, t.....	6,356	7,203*
Iroquois, v.....	1,078	1,136	Port Elgin, t.....	2,790*	3,064*
Iroquois Falls, t.....	1,478	1,681	Port Hope, t.....	1,597	1,632
Kapuskasing, t.....	5,463*	6,870	Port McNicoll, v.....	7,522*	8,091*
Keewatin, t.....	1,949	2,197	Port Perry, v.....	932	1,053
Kemptville, v. ⁶	1,730	1,959	Port Stanley, v.....	2,121	2,262
Kenora, t.....	10,278	10,904	Powassan, t.....	1,450	1,450*
Kincardine, t.....	2,667	2,841	Prescott, t.....	995	1,064
Kingston, c.....	48,618*	53,526	Rainy River, t.....	4,920*	5,366
Kingsville, t.....	2,884*	3,041	Renfrew, t.....	9,387*	11,577*
Kitchener, c.....	59,562*	74,485*	Richmond, v.....	1,354	1,168
Lakefield, v.....	1,938	2,167*	Richmond Hill, t.....	8,634	8,935
Leamington, t.....	7,856*	9,030*	Ridgetown, t.....	794	1,215
Leaside, t.....	16,538*	18,579	Riverside, t.....	6,077*	16,446*
Levack, t.....	2,929*	3,178	Rockcliffe Park, v.....	2,483*	2,603*
Lindsay, t.....	10,110	11,399*	Rockland, t.....	13,335	18,089
Listowel, t.....	3,644	4,002	Rodney, v.....	2,097	2,084
Little Current, t.....	1,514	1,527	St. Catharines, c.....	2,757	3,037
Lively, t.....	2,840	3,211	St. Clair Beach, v.....	1,026	1,041
London, c.....	101,693*	169,569*	St. Mary's, t.....	39,708*	84,472*
Long Branch, v.....	10,249*	11,039*	St. Thomas, c.....	834	1,460*
L'Orignal, v.....	1,067	1,189	Sarnia, c.....	4,185	4,482
Lucknow, v.....	962	1,031	Sault Ste. Marie, c.....	19,129*	22,469*
Madoc, v.....	1,325	1,347	Seaforth, t.....	43,447	50,976
Markdale, v.....	986	1,090	Shelburne, v.....	37,329	43,088*
Markham, v.....	2,873*	4,294	Simcoe, t.....	2,128	2,255
Marmora, v.....	1,428*	1,381	Sioux Lookout, t.....	1,245	1,239
Massey, v.....	1,068	1,324	Smiths Falls, t.....	8,078*	8,754*
Mattawa, t.....	3,208	3,314	Smooth Rock Falls, t.....	2,504	2,453
Meaford, t.....	3,643*	3,834*	Southampton, t.....	8,967*	9,603*
Midland, t.....	8,250	8,656	South River, v.....	1,104	1,131
Milton, t.....	4,294*	5,629*	Stayner, t.....	1,640	1,818
Milverton, v.....	1,070	1,111	Stirling, v.....	995	1,044
Mimico, t.....	13,687	18,212	Stittsville, v.....	1,429	1,671
Mitchell, t.....	2,146	2,247	Stoney Creek, t.....	1,191	1,315
Morrisburg, v.....	2,131	1,820	Stouffville, v.....	1	1,508
Mount Forest, t.....	2,438	2,623	Stratford, c.....	4,506*	6,043
Napanee, t.....	4,273	4,500	Strathroy, t.....	2,307*	3,188
Newcastle, v.....	1,098	1,272	Streetsville, v.....	19,972*	20,467*
New Hamburg, v.....	1,939*	2,181	Sturgeon Falls, t.....	4,240	5,150
New Liskeard, t.....	4,619	4,896		2,648*	5,056*
Newmarket, t.....	7,368	8,932*		5,874	6,288

For footnotes, see end of table, p. 169.

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—continued**

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Ontario—concluded			Manitoba—concluded		
Sudbury, c.....	46,482	80,120*	Virden, t.....	3,225	2,708
Sutton, v.....	1,310	1,470*	West Kildonan, c.....	1	20,077
Swansea, v.....	8,595	9,628	Winkler, t.....	1,634	2,529*
Tavistock, v.....	1,155	1,232	Winnipeg, c.....	255,093*	265,429*
Tecumseh, t.....	4,209	4,476			
Thamesville, v.....	1,074*	1,054	Saskatchewan—		
Thessalon, t.....	1,716	1,725	Assiniboia, t.....	2,027	2,491*
Thornbury, t.....	1,037	1,097	Battleford, t.....	1,498	1,627
Thorold, t.....	8,053	8,633	Biggar, t.....	2,424	2,702
Tilbury, t.....	3,138	3,036	Broadview, t.....	978	1,008*
Tillsonburg, t.....	6,216	6,600	Canora, t.....	1,873	2,117
Timmins, t.....	27,551	29,270	Creighton, t.....	1,659	1,729
Toronto, c.....	667,706*	672,407*	Esterhazy, t.....	748	1,114*
Trenton, t.....	11,492*	13,183*	Estevan, c.....	5,264	7,728*
Tweed, v.....	1,634	1,791	Eston, t.....	1,625*	1,695*
Uxbridge, t.....	2,065	2,316	Flin Flon, t.....	7	7
Vankleek Hill, t.....	1,647	1,735	Fort Qu'Appelle, t.....	1,130	1,521
Victoria Harbour, v.....	1,012	1,066	Gravelbourg, t.....	1,434	1,499
Walkerton, t.....	3,698*	3,851	Grenfell, t.....	1,080*	1,256
Wallaceburg, t.....	7,892*	7,881	Gull Lake, t.....	1,052	1,038
Waterdown, v.....	1,754	1,844	Herbert, t.....	958	1,008
Waterford, t.....	1,908	2,221*	Hudson Bay, t.....	1,421	1,601
Waterloo, c.....	16,373*	21,366*	Humboldt, t.....	2,916	3,245
Watford, v.....	1,217	1,293	Indian Head, t.....	1,721	1,802*
Welland, c.....	16,405	36,079*	Kamsack, t.....	2,843*	2,968
Wellington, v.....	1,077	1,064	Kerrobert, t.....	1,037	1,220
West Lorne, v.....	1,088	1,070	Kindersley, t.....	2,572	2,990
Weston, t.....	9,543*	9,715	Leader, t.....	1,085*	1,211
Wheatley, v.....	1,198	1,362	Lloydminster, c. (Sask. and		
Whitby, t.....	9,995	14,685	Alta.).....	5,077*	5,067*
Wiarion, t.....	1,954	2,138	Maple Creek, t.....	1,974	2,291
Winchester, v.....	1,338	1,429	Meadow Lake, t.....	2,477	2,803
Windsor, c.....	121,980	114,367*	Melfort, t.....	3,322	4,039
Wingham, t.....	2,766	2,922	Melville, c.....	4,948	5,191
Woodbridge, v.....	1,958	2,315	Moose Jaw, c.....	29,603*	33,206*
Woodstock, c.....	18,347*	20,486	Moosomin, t.....	1,390	1,781
			Nipawin, t.....	3,337	3,836*
Manitoba—			North Battleford, c.....	8,924	11,230*
Altona, t.....	1,698	2,026	Outlook, t.....	885	1,340
Beausejour, t.....	1,523	1,770	Oxbow, t.....	783	1,359*
Boissevain, t.....	1,115	1,303	Prince Albert, c.....	20,366	24,168*
Brandon, c.....	24,796	28,166	Radville, t.....	1,087	1,067
Brooklands, v.....	3,941	4,369	Regina, c.....	89,755*	112,141*
Carberry, t.....	1,065	1,113	Rosetown, t.....	2,262	2,450
Carman, t.....	1,884	1,930	Rosthern, t.....	1,268	1,284*
Dauphin, t.....	6,190	7,374	Saskatoon, c.....	72,858*	95,526*
East Kildonan, c.....	1	27,305	Shanavon, t.....	1,959	2,154
Flin Flon, t. (Man. and Sask.)	10,234	11,104	Shellbrook, t.....	907*	1,042
Gimli, t.....	1,660	1,841	Swift Current, c.....	10,612	12,186
Grandview, t.....	963	1,057	Tisdale, t.....	2,104	2,402
Killarney, t.....	1,434	1,729	Unity, t.....	1,607	1,902
Melita, t.....	926	1,038	Wadena, t.....	1,154	1,311
Minnedosa, t.....	2,306	2,211	Watrous, t.....	1,340	1,461
Morden, t.....	2,237*	2,793	Weyburn, c.....	7,684*	9,101
Morris, t.....	1,260	1,370	Wilkie, t.....	1,630	1,612
Neepawa, t.....	3,109	3,197	Wolseley, t.....	1,001	1,031
Portage la Prairie, c.....	10,525	12,388*	Wynyard, t.....	1,522	1,686
Rivers, t.....	1,422	1,574	Yorkton, c.....	8,256	9,995
Roblin, v.....	1,173	1,368			
Russell, t.....	1,227	1,263	Alberta—		
St. Boniface, c.....	28,851	37,600	Athabasca, t.....	1,293	1,487
St. James, c.....	26,502	33,977	Barhead, t.....	1,610*	2,286*
Selkirk, t.....	7,413	8,576	Bellevue, v.....	1	1,323
Souris, t.....	1,759	1,841	Beverly, t.....	4,602	9,041
Steinbach, t.....	2,688	3,739*	Black Diamond, t.....	991*	1,043
Stonewall, t.....	1,110	1,420	Blairmore, t.....	1,973*	1,980
Swan River, t.....	2,644	3,163	Bonnyville, t.....	1,495*	1,736
The Pas, t.....	3,971	4,671*	Bow Island, t.....	1,001	1,122*
Transcona, t.....	8,312	14,248	Bowness, t.....	6,217	9,184
Tuxedo, t.....	1,163	1,627*	Brooks, t.....	2,320*	2,827

For footnotes, see end of table.

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1961,
by Province, Census Years 1956 and 1961—concluded**

Province and Incorporated Centre	1956	1961	Province and Incorporated Centre	1956	1961
	No.	No.		No.	No.
Alberta—concluded			British Columbia—		
Calgary, c.....	181,780*	249,641*	Alberni, c.....	3,947	4,616
Camrose, c.....	5,817	6,939*	Armstrong, c.....	1,197	1,288
Cardston, t.....	2,607	2,801	Burns Lake, v.....	1,016	1,041*
Castor, t.....	958	1,025	Campbell River, v.....	3,069*	3,737
Clareholm, t.....	2,431	2,143	Castlegar, v.....	1,705	2,253*
Coaldale, t.....	2,327*	2,592	Chilliwack, c.....	7,297	8,259
Cold Lake, t.....	1,097	1,307	Comox, v.....	1,151*	1,756
Coleman, t.....	1,566	1,713	Courtenay, c.....	3,025	3,485
Devon, t.....	1,429*	1,418*	Cranbrook, c.....	4,562*	5,549
Didsbury, t.....	1,227	1,254*	Creston, v.....	1,844*	2,460*
Drayton Valley, t.....	2,588	3,854*	Cumberland, v.....	1,039	1,303*
Drumheller, c.....	2,632*	2,931	Dawson Creek, c.....	7,531*	10,946*
Edmonton, c.....	226,002*	281,027*	Duncan, c.....	3,247	3,728*
Edson, t.....	2,560	3,198	Enderby, c.....	965	1,075
Fairview, t.....	1,200*	1,506	Fernie, c.....	2,808*	2,661
Forest Lawn, t.....	3,150*	12,263*	Fort St. James, v.....	615	1,081
Fort Macleod, t.....	2,103	2,490	Fort St. John, t.....	1,908	3,619
Fort Saskatchewan, t.....	2,582*	2,972*	Fruitvale, v.....	870	1,032
Grand Centre, t.....	1	1,493	Gibson's Landing, v.....	990	1,091
Grande Prairie, c.....	6,302*	8,352*	Golden, v.....	1	1,776
Grimshaw, t.....	904*	1,095*	Grand Forks, c.....	1,995	2,347
Hanna, t.....	2,327	2,645	Hope, v.....	2,226	2,751
High Prairie, t.....	1,743*	1,756*	Kamloops, c.....	9,096*	10,076*
High River, t.....	2,102	2,276	Kelowna, c.....	9,181	13,188*
Hinton, t.....	1	3,529	Kimberley, c.....	5,774	6,013*
Innisfail, t.....	1,883*	2,270*	Kinnaird, v.....	1,305	2,123*
Jasper Place, t.....	15,957	30,530	Ladysmith, v.....	2,107	2,173
Lac La Biche, t.....	967	1,314*	Lake Cowichan, v.....	1,949	2,149*
Lacombe, t.....	2,747	3,029*	Langley, c.....	2,131	2,365
Leduc, t.....	2,008*	2,356*	Lillooet, v.....	1,083*	1,304*
Lethbridge, c.....	29,462*	35,454*	Marysville, v.....	930	1,057
Lloydminster, c.....	8	8	Merritt, v.....	1,790	3,039
Magrath, t.....	1,382	1,338	Mission City, t.....	3,010	3,251*
McLennan, t.....	1,092*	1,078*	Nanaimo, c.....	12,705*	14,135
McMurray, t.....	1,110	1,186	Nelson, c.....	7,226	7,074
Medicine Hat, c.....	20,826*	24,481*	New Westminster, c.....	31,665	33,654
Montgomery, t.....	1	5,077	North Kamloops, v.....	4,398*	6,456*
Nanton, t.....	1,047	1,054	North Vancouver, c.....	19,951	23,656
Okotoks, t.....	764	1,043*	Oliver, v.....	1,147	1,774*
Olds, t.....	1,980	2,433	Osoyoos, v.....	860	1,022
Peace River, t.....	2,034*	2,543*	Parksville, v.....	1,112*	1,183
Pincher Creek, t.....	1,729	2,961*	Penticton, c.....	11,894	13,859
Ponoka, t.....	3,387	3,938	Port Alberni, c.....	10,373	11,560
Provost, t.....	878	1,022*	Port Coquitlam, c.....	4,632	8,111
Raymond, t.....	2,399	2,362*	Port Moody, c.....	2,713	4,789
Redcliff, t.....	2,001	2,221	Prince George, c.....	10,563*	13,877*
Red Deer, c.....	12,338*	19,612*	Prince Rupert, c.....	10,498	11,987
Redwater, t.....	1,065*	1,135	Princeton, v.....	2,245	2,163
Rimby, t.....	980*	1,266	Quesnel, t.....	4,384*	4,673*
Rocky Mountain House, t.....	1,285	2,360*	Revelstoke, c.....	3,469	3,624
St. Albert, t.....	1,320	4,059	Rossland, c.....	4,344	4,354
St. Paul, t.....	2,229*	2,823	Salmon Arm, v.....	1,344	1,506*
Stettler, t.....	3,359	3,638*	Sidney, v.....	1,371	1,558*
Stony Plain, t.....	1,098	1,311	Smithers, v.....	1,962	2,487
Sylvan Lake, t.....	1,114	1,381	Squamish, v.....	1,292*	1,557*
Taber, t.....	3,688	3,951	Trail, c.....	11,395	11,580
Three Hills, t.....	1,095*	1,491	Vancouver, c.....	365,844*	384,522*
Valleyview, t.....	973	1,077	Vanderhoof, v.....	1,085*	1,460
Vegreville, t.....	2,574	2,908	Vernon, c.....	8,998	10,250*
Vermilion, t.....	2,196	2,449	Victoria, c.....	54,584	54,941
Viking, t.....	897*	1,043*	Warfield, v.....	2,051	2,212
Vulcan, t.....	1,204	1,310*	White Rock, c.....	1	6,453
Wainwright, t.....	2,653	3,351	Williams Lake, v.....	1,790*	2,120*
Westlock, t.....	1,136*	1,838*			
Wetaskiwin, c.....	4,476*	5,300*			
Whitecourt, v.....	1	1,054			
			Yukon Territory—		
			Whitehorse, c.....	2,570	5,031

¹ Incorporated after June 1, 1956.

the town limits, numbering 435.

² Includes residents of the Nova Scotia Sanatorium located outside

the town limits, numbering 435.

³ Amalgamation of the towns of L'Abord à Plouffe, St. Martin and rural

municipality of St. Martin (Renaud).

⁴ Brockville became a city on Apr. 1, 1962.

⁵ Eastview became

a city on Jan. 1, 1963.

⁶ Kemptville became a town on Jan. 1, 1963.

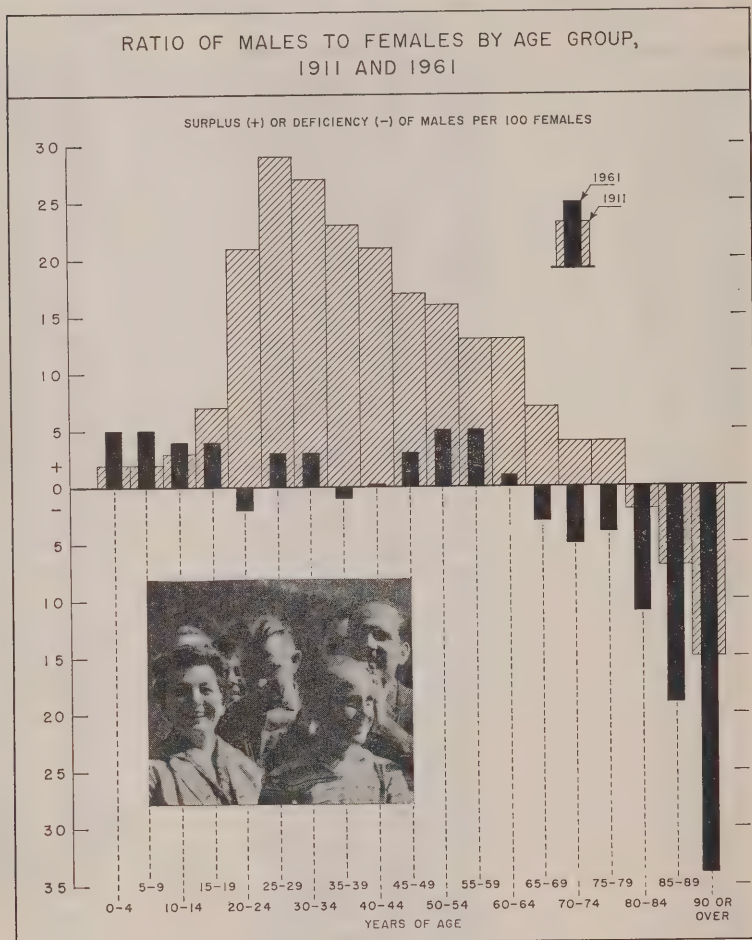
⁷ See Manitoba.

⁸ See

Saskatchewan.

Subsection 5.—Sex and Age Distribution

The sex and age distributions of a population are basic to most, if not all, other analyses, as they influence employment, marriage, birth and death rates and a multitude of other factors that are of great importance in the national life.



Sex.—The Canadian population has always been characterized by an excess of males, although this excess has been greatly modified in recent years. Since Confederation, the peak sex ratio for Canada as a whole was 113 reached in 1911, a census year that fell within a period of heavy immigration; the 1961 ratio was 102. In the older settled provinces east

of Manitoba, the ratio varied between 104 in 1911 and 101 in 1961 but in the western provinces which were being opened to settlement in the early years of the century the ratio changed from a high of 146 in 1911 to 105 in 1961.

The sex distributions and variations in ratio among the provinces are given for the census years 1951, 1956 and 1961 in Table 10.

10.—Sex Distribution of the Population and Sex Ratio, by Province, Census Years 1951, 1956 and 1961

Province or Territory	1951			1956			1961		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland..	185,143	176,273	105	213,905	201,169	106	234,924	222,929	105
Prince Edward Island.....	50,218	48,211	104	50,510	48,775	104	53,357	51,272	104
Nova Scotia....	324,955	317,629	102	353,182	341,535	103	374,244	362,763	103
New Brunswick	259,211	256,486	101	279,590	275,026	102	302,440	295,496	102
Quebec.....	2,022,127	2,033,554	99	2,317,677	2,310,701	100	2,631,856	2,627,355	100
Ontario.....	2,314,170	2,283,372	101	2,721,519	2,683,414	101	3,134,528	3,101,564	101
Manitoba.....	394,818	381,723	103	432,478	417,562	104	468,503	453,183	103
Saskatchewan..	434,568	397,160	109	458,428	422,237	109	479,564	445,617	108
Alberta.....	492,192	447,309	110	585,921	537,195	109	689,383	642,561	107
British Columbia....	596,961	568,249	105	720,516	677,948	106	829,094	799,988	104
Yukon Territory	5,457	3,639	150	6,924	5,266	131	8,178	6,450	127
Northwest Territories...	9,053	6,951	130	11,229	8,084	139	12,822	10,176	126
Canada....	7,088,873	6,920,556	102	8,151,879	7,928,912	103	9,218,893	9,019,354	102

Age.—Recent trends in vital rates and immigration have had a considerable effect on the age composition of the Canadian people. A high birth rate together with a low death rate among children added nearly 2,000,000 to the number of persons under 15 years of age between 1951 and 1961, an increase of 46 p.c. The proportion of this group to the total population increased from 30.3 p.c. to 34.0 p.c. in the ten-year period. The population of working age—those of 15 to 64 years of age—increased more slowly at 22.9 p.c. in the decade and the relative proportion of this group declined from 61.9 p.c. to 58.4 p.c. Without the influence of immigration in the 1951-61 period, the proportion of this group would have been much lower since a large part of it consisted of persons born in the low birth rate period of the 1930's. The proportion of persons 65 years of age or over in 1961 was 7.6 p.c. compared with 7.8 p.c. in 1951.

Table 11 shows the population of Canada classified by five-year age groups and by sex for the census years 1951, 1956 and 1961. The provincial distribution by specified age group is given for 1961 in Table 12.

11.—Male and Female Populations, by Age Group, Census Years 1951, 1956 and 1961

Age Group	1951		1956		1961	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.
0 - 4 years.....	879,063	843,046	1,011,835	971,728	1,154,091	1,102,310
5 - 9 ".....	713,873	683,952	919,952	887,101	1,063,840	1,015,682
10 - 14 ".....	575,122	555,661	732,032	702,562	948,160	907,839
15 - 19 ".....	532,180	525,792	586,635	575,666	729,035	703,524
20 - 24 ".....	537,535	551,106	567,179	561,931	587,139	596,507
25 - 29 ".....	552,812	578,403	605,836	592,301	613,897	595,400
30 - 34 ".....	512,557	530,177	602,535	613,760	644,407	627,403
35 - 39 ".....	503,571	495,562	555,763	558,622	631,072	639,852
40 - 44 ".....	445,800	422,767	522,615	502,784	559,996	558,965
45 - 49 ".....	387,708	356,971	455,827	422,988	515,516	499,800
50 - 54 ".....	240,461	322,195	381,835	351,215	442,909	420,279
55 - 59 ".....	292,564	278,126	321,973	307,271	362,145	343,690
60 - 64 ".....	264,324	241,828	265,652	259,265	292,569	291,066
65 - 69 ".....	228,076	205,421	237,551	226,562	239,685	247,417
70 - 74 ".....	160,398	154,674	187,490	183,218	196,076	206,099
75 - 79 ".....	94,130	94,261	113,550	113,948	134,186	140,051
80 - 84 ".....	45,963	50,828	55,636	61,460	69,046	77,771
85 - 89 ".....	17,539	22,060	21,688	26,670	27,178	33,606
90 years or over.....	5,197	7,726	6,295	9,870	7,946	12,093
Totals.....	7,088,573	6,920,556	8,151,879	7,928,912	9,218,893	9,019,354

12.—Age Distribution of the Population, by Province, Census 1961

Province or Territory	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-34 Years
	No.	No.	No.	No.	No.	No.
Newfoundland.....	67,695	64,404	59,464	43,829	30,238	52,260
Prince Edward Island.....	13,221	12,216	12,264	8,875	6,344	11,049
Nova Scotia.....	91,239	84,760	80,329	64,239	49,311	87,316
New Brunswick.....	78,560	75,882	72,745	63,514	37,419	67,477
Quebec.....	671,256	624,074	598,065	467,426	369,633	735,825
Ontario.....	740,193	674,519	593,037	436,883	386,966	882,476
Manitoba.....	107,574	101,382	91,150	70,308	59,007	117,317
Saskatchewan.....	113,755	106,886	94,273	72,864	56,996	113,556
Alberta.....	179,888	159,053	130,383	99,004	89,154	192,571
British Columbia.....	186,793	171,661	150,689	112,653	95,230	214,269
Yukon Territory.....	2,837	1,761	1,187	765	1,109	2,956
Northwest Territories.....	3,890	2,624	2,413	1,699	2,239	4,005
Canada.....	2,256,401	2,079,522	1,855,999	1,432,559	1,183,646	2,481,107
	35-44 Years	45-54 Years	55-64 Years	65-69 Years	70+ Years	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	48,964	39,343	24,731	9,684	17,211	457,853
Prince Edward Island.....	11,407	10,501	7,822	3,582	7,348	104,629
Nova Scotia.....	69,613	75,881	50,897	21,341	42,076	737,007
New Brunswick.....	69,809	56,676	38,937	16,216	30,701	597,936
Quebec.....	665,734	511,334	339,563	116,923	189,378	5,259,211
Ontario.....	866,563	670,544	476,838	180,063	328,010	6,236,092
Manitoba.....	126,774	100,500	69,886	28,169	55,119	921,686
Saskatchewan.....	115,833	97,430	68,018	28,208	57,362	925,181
Alberta.....	172,623	128,547	87,643	31,724	61,354	1,331,944
British Columbia.....	223,813	184,823	123,535	50,752	114,864	1,629,082
Yukon Territory.....	2,118	1,243	677	180	295	14,628
Northwest Territories.....	2,620	1,682	923	260	334	22,998
Canada.....	2,389,885	1,878,504	1,289,470	487,102	904,052	18,238,247

Subsection 6.—Marital Status

After age and sex, marital status analysis is probably next in importance from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population. If the proportion of females in this group is low, the expected birth rate will be low. In 1961, 62.9 p.c. of all married females were in the 15-44 age group compared with 64.3 p.c. in 1956, 61.2 p.c. in 1941 and 63.5 p.c. in 1931.

The high birth rate in the 1951-61 period, besides having a notable effect on the general population growth and age composition, has been an influence on the 32.7-p.c. increase in the single population. During the same period, the married population increased by 28.2 p.c. and widowed by 21.0 p.c. Other striking features are the excess of married males (largely consisting of male immigrants whose wives had not yet joined them) and the great preponderance of widows over widowers.

The marital status of the population in 1961 is shown in Table 13.

13.—Marital Status of the Population, by Age Group and Sex, Census 1961

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
Under 15 years.....	M.	3,166,091	—	—	—	3,166,091
	F.	3,025,831	—	—	—	3,025,831
	T.	6,191,922	—	—	—	6,191,922
15 - 19 "	M.	719,727	9,198	88	22	729,035
	F.	642,007	61,197	262	58	703,524
	T.	1,361,734	70,395	350	80	1,432,559
20 - 24 "	M.	408,005	178,618	233	233	587,139
	F.	241,435	353,215	931	926	596,507
	T.	649,440	531,833	1,164	1,209	1,183,646
25 - 34 "	M.	293,298	959,702	1,864	3,440	1,258,304
	F.	158,119	1,051,198	7,407	6,079	1,222,803
	T.	451,417	2,010,900	9,271	9,519	2,481,107
35 - 44 "	M.	143,174	1,034,645	7,527	5,722	1,191,068
	F.	108,573	1,052,760	28,258	9,226	1,198,817
	T.	251,747	2,087,405	35,785	14,948	2,389,885
45 - 54 "	M.	100,426	834,787	17,128	6,084	958,425
	F.	91,012	751,129	69,415	8,523	920,079
	T.	191,438	1,585,916	86,543	14,607	1,878,504
55 - 64 "	M.	74,357	540,934	35,390	4,033	654,714
	F.	65,697	439,436	125,540	4,083	634,756
	T.	140,054	980,370	160,930	8,116	1,289,470
65 - 69 "	M.	26,251	185,739	26,516	1,179	239,685
	F.	25,019	136,933	84,579	886	247,417
	T.	51,270	322,672	111,095	2,065	487,102
70 years or over.....	M.	46,235	276,102	110,761	1,334	434,432
	F.	47,871	158,711	262,324	714	469,620
	T.	94,106	434,813	373,085	2,048	904,052
All Ages.....	M.	4,977,564	4,019,725	199,507	22,097	9,218,893
	F.	4,405,564	4,004,579	578,716	30,495	9,019,354
	T.	9,383,128	8,024,304	778,223	52,592	18,238,247

Subsection 7.—Ethnic Groups and Birthplaces

Ethnic Group.—A population made up of diverse ethnic groups gives rise to political, social and economic problems quite different in nature from those of one with a more homogeneous ethnic composition. These problems are mitigated, however, to the extent

that certain groups are more easily integrated than others. It is equally true that the different backgrounds of various ethnic groups lend variety and diversity to the national life.

The two basic groups in the Canadian population are the French and British Isles ethnic groups. The influence of the French in Canada covers a longer period and with the exception of the 1921 Census this group has always exceeded in number any of the components of the British Isles ethnic group.

In 1961, each person was asked the question: "To what ethnic or cultural group did you or your ancestor (on the male side) belong on coming to this Continent?". The language spoken at the time by the person, or his paternal ancestor, was used as an aid in determining the person's ethnic group. The classification is given for 1961 in Table 14 with comparative figures for 1951 and 1941. Information on ethnic group was not collected in the 1956 Census.

14.—Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961

Ethnic Group	1941 ¹	1951	1961	
	No.	No.	No.	p.c.
British	5,715,904	6,709,685	7,996,669	43.8
English.....	2,968,402	3,630,344	4,195,175	23.0
Irish.....	1,267,702	1,439,635	1,753,351	9.6
Scottish.....	1,403,974	1,547,470	1,902,302	10.4
Other.....	75,826	92,236	145,841	0.8
Other European	5,526,964	6,872,889	9,657,195	53.0
French.....	3,483,038	4,319,167	5,540,346	30.4
Austrian.....	37,715	32,231	106,535	0.6
Belgian.....	29,711	35,148	61,382	0.3
Czech and Slovak.....	42,912	63,959	73,061	0.4
Danish.....	37,439	42,671	85,473	0.5
Finnish.....	41,683	43,745	59,436	0.3
German.....	464,682	619,995	1,049,599	5.8
Greek.....	11,692	13,966	56,475	0.3
Hungarian.....	54,598	60,460	126,220	0.7
Icelandic.....	21,050	23,307	30,623	0.2
Italian.....	112,625	152,245	450,351	2.5
Jewish.....	170,241	181,670	173,344	1.0
Lithuanian.....	7,789	16,224	27,629	0.2
Netherlands.....	212,863	264,267	429,679	2.4
Norwegian.....	100,718	119,266	148,681	0.8
Polish.....	167,485	199,845	323,517	1.8
Romanian.....	24,689	23,601	43,805	0.2
Russian.....	83,708	91,279	119,168	0.7
Swedish.....	85,396	97,780	121,757	0.7
Ukrainian.....	305,929	395,043	473,337	2.6
Yugoslavic.....	21,214	21,404	68,587	0.4
Other.....	9,787	35,616	88,190	0.5
Asiatic	74,064	72,827	121,753	0.7
Chinese.....	34,627	32,528	53,197	0.3
Japanese.....	23,149	21,663	29,157	0.2
Other.....	16,288	18,636	34,399	0.2
Other Origins	159,723	354,028	462,630	2.5
Native Indian and Eskimo.....	125,521	165,607	220,121	1.2
Negro.....	22,174	18,020	32,127	0.2
Other and not stated.....	42,028	170,401	210,382	1.2

¹ Excludes Newfoundland.

² Includes 35,416 half-breeds.

Birthplace.—Table 15 gives the total population of Canada classified by country of birth for the census years 1941, 1951 and 1961, and Table 16 shows the province of birth of Canadian-born persons for the same years. For immigrants, the country of birth was recorded according to boundaries existing at the date of the census. Information on birthplaces was not collected in the 1956 Census.

15.—Country of Birth of the Population, Census Years 1941, 1951 and 1961

Country	1941 ¹	1951	1961	
	No.	No.	No.	p.c.
Canada.....	9,487,808	11,949,518	15,393,984	84.4
British Isles.....	960,125 ²	912,482	969,715	5.3
Other Commonwealth.....	43,644	20,567	47,887	0.3
Europe.....	653,705	801,618	1,468,058	8.0
Austria.....	50,713	37,598	70,192	0.4
Czechoslovakia.....	25,564	29,546	35,743	0.2
France.....	13,795	15,650	36,103	0.2
Germany.....	28,479	42,693	189,131	1.0
Greece.....	5,871	8,594	38,017	0.2
Hungary.....	31,813	32,929	72,900	0.4
Italy.....	40,432	57,789	258,071	1.4
Netherlands.....	9,923	41,457	135,033	0.7
Poland.....	155,400	164,474	171,467	0.9
Scandinavian countries ³	72,473	64,522	74,616	0.4
Union of Soviet Socialist Republics.....	124,402	188,292	186,653	1.0
Yugoslavia.....	17,416	20,912	50,826	0.3
Other European.....	77,424	97,162	149,306	0.8
Asia.....	44,443	37,145	57,761	0.3
China.....	29,095	24,166	36,724	0.2
Other Asian.....	15,348	12,979	21,037	0.1
United States.....	312,473	282,010	283,908	1.6
Other countries.....	3,512	6,089	16,934	0.1
Totals.....	11,506,655⁴	14,009,429	18,238,247	100.0

¹ Excludes Newfoundland.
² Includes the Republic of Ireland.
³ Includes Denmark, Iceland
 Norway and Sweden.
⁴ Includes persons whose birthplace was not stated.

16.—Province of Birth of Canadian-Born Persons, Census Years 1941, 1951 and 1961

Province	1941	1951	1961	Province or Territory	1941	1951	1961
	No.	No.	No.		No.	No.	No.
Nfld.....	..	397,623	497,591	Sask.....	667,832	817,404	1,030,755
P.E.I.....	108,423	117,310	130,123	Alta.....	479,098	649,594	965,425
N.S.....	568,797	660,150	783,848	B.C.....	335,554	514,651	843,596
N.B.....	463,127	549,984	655,066	Yukon and N.W.T. ¹	12,267	16,654	26,028
Que.....	3,155,549	3,881,487	4,916,024				
Ont.....	3,123,810	3,645,074	4,667,159				
Man.....	570,349	699,587	878,369	Canada.....	9,487,808¹	11,949,518	15,393,984

¹ Includes persons born in Canada whose province of birth was not stated.

Subsection 8.—Religious Denominations

In the 1961 Census, enumerators were instructed to record the specific religious body, denomination, sect or community reported in answer to the question: "What is your religion?". Thus it should be noted that census figures do not measure church membership or indicate the degree of affiliation with any religious body. As shown by Table 17, close to eight out of ten persons in Canada stated that they belonged to one of the three numerically largest denominations—Roman Catholic, United Church and Anglican—in 1961. The table gives comparative figures for the census years 1941 and 1951; this information was not collected in the 1956 Census.

17.—Principal Religious Denominations of the Population, Census Years 1941, 1951 and 1961

Religious Denomination	1941	1951	1961	
	No.	No.	No.	p.c.
Adventist.....	18,485	21,398	25,999	0.1
Anglican Church of Canada.....	1,754,368	2,060,720	2,409,068	13.2
Baptist.....	484,465	519,585	593,553	3.3
Greek Orthodox.....	139,845	172,271	239,766	1.3
Jehovah's Witnesses.....	7,007	34,596	68,018	0.4
Jewish.....	168,585	204,836	254,368	1.4
Lutheran.....	401,836	444,923	662,744	3.6
Mennonite ¹	111,554	125,938	152,452	0.8
Mormon.....	25,328	32,888	50,016	0.3
Pentecostal.....	57,742	95,131	143,877	0.8
Presbyterian.....	830,597	781,747	818,558	4.5
Roman Catholic.....	4,806,431	6,069,496	8,342,826	45.7
Salvation Army.....	33,609	70,275	92,054	0.5
Ukrainian (Greek) Catholic ²	185,948	191,051	189,653	1.0
United Church of Canada.....	2,208,658	2,867,271	3,664,008	20.1
Other.....	272,197	317,303	531,287	2.9
Totals.....	11,506,655³	14,009,429	18,238,247	100.0

¹ Includes "Hutterites".² Includes "Other Greek Catholic".³ Exclusive of Newfoundland.

Subsection 9.—Languages and Mother Tongues

The term "official language" used by the census refers only to the English and French languages. "Mother tongue" is the language a person first learned in childhood and still understands. It should be noted that persons indicated as speaking "English only" or "French only" with respect to official language may also speak other languages and have a mother tongue other than English or French. Of the two "official languages" in Canada, the proportion speaking English only in 1961 was 67.4 p.c., French only 19.1 p.c., both English and French 12.2 p.c. and neither English nor French 1.3 p.c. Table 18 shows the distribution of official language by province.

18.—Population Speaking One, Both or Neither of the Official Languages, by Province, Census 1961

Province or Territory	English Only	French Only	English and French	Neither English nor French
	No.	No.	No.	No.
Newfoundland.....	450,945	522	5,299	1,087
Prince Edward Island.....	95,296	1,219	7,938	176
Nova Scotia.....	684,805	5,938	44,987	1,277
New Brunswick.....	370,922	112,054	113,495	1,465
Quebec.....	608,635	3,254,850	1,338,878	56,848
Ontario.....	5,548,766	95,236	493,270	98,820
Manitoba.....	825,955	7,954	68,368	19,409
Saskatchewan.....	865,821	3,853	42,074	13,433
Alberta.....	1,253,824	5,534	56,920	15,666
British Columbia.....	1,552,560	2,559	57,504	16,459
Yukon Territory.....	13,679	38	825	86
Northwest Territories.....	13,554	109	1,614	7,721
Canada.....	12,234,762	3,489,866	2,231,172	233,447

The proportion of the population reporting English as their mother tongue in 1961 was 58.5 p.c. (compared with 59.1 p.c. in 1951), French 28.1 p.c. (29.0 p.c. in 1951) and all other mother tongues 13.5 p.c. (11.8 p.c. in 1951). Table 19 shows the numerical and percentage distribution by mother tongue for Canada in 1961.

19.—Mother Tongues of the Population, Census 1961

Mother Tongue	Number	Percentage of Total	Mother Tongue	Number	Percentage of Total
English.....	10,660,534	58.45	Danish.....	35,035	0.19
French.....	5,123,151	28.09	Swedish.....	32,632	0.18
German.....	563,713	3.09	Serbo-Croatian.....	28,866	0.16
Ukrainian.....	361,496	1.98	Japanese.....	17,856	0.10
Italian.....	339,626	1.86	Lithuanian.....	14,997	0.08
Netherlands.....	170,177	0.93	Flemish.....	14,304	0.08
Indian and Eskimo.....	166,531	0.91	Lettish.....	14,062	0.08
Polish.....	161,720	0.89	Estonian.....	13,830	0.08
Magyar.....	85,939	0.47	Syrian and Arabic.....	12,999	0.07
Yiddish.....	82,448	0.45	Romanian.....	10,165	0.06
Chinese.....	49,099	0.27	Icelandic.....	8,993	0.05
Finnish.....	44,785	0.25	Gaelic.....	7,533	0.04
Russian.....	42,903	0.24	Welsh.....	3,040	0.02
Slovak.....	42,546	0.23	Other.....	48,758	0.27
Greek.....	40,455	0.22			
Norwegian.....	40,054	0.22	Canada.....	18,238,247	100.00

Subsection 10.—Households and Families

This Subsection contains a summary of the principal statistics on households and families recorded at the 1961 Census; more detailed information may be found in 1961 Census reports relating to households and families (see also p. 156).

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling.* It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. Every person is a member of some household and the number of households equals the number of occupied dwellings.

The total number and the average size of households are given by province for the census years 1951, 1956 and 1961 in Table 20. The relatively stable average of persons per household indicates an almost equal rate of increase for the dwelling stock as for the population.

* A dwelling is defined as a structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall, lobby, vestibule or stairway inside. The entrance must not be through another person's living quarters.

20.—Households and Persons per Household, by Province, Census Years 1951, 1956 and 1961

Province or Territory	Households			Average Persons per Household		
	1951	1956	1961	1951	1956	1961
	No.	No.	No.	No.	No.	No.
Newfoundland.....	70,980	78,808	87,940	5.0	5.1	5.0
Prince Edward Island.....	22,454	22,682	23,942	4.3	4.2	4.2
Nova Scotia.....	149,555	162,854	175,341	4.2	4.1	4.0
New Brunswick.....	114,007	120,475	132,715	4.4	4.5	4.4
Quebec.....	858,784	1,001,264	1,191,469	4.6	4.4	4.2
Ontario.....	1,181,126	1,392,491	1,640,881	3.8	3.8	3.7
Manitoba.....	202,398	217,964	239,754	3.7	3.7	3.7
Saskatchewan.....	221,456	233,664	245,424	3.7	3.6	3.6
Alberta.....	250,747	294,047	349,816	3.6	3.7	3.7
British Columbia.....	337,777	392,403	459,534	3.3	3.4	3.4
Yukon and Northwest Territories.....	..	6,994	7,920	..	3.8	4.2
Canada.....	3,409,284¹	3,923,646	4,554,736	4.0¹	3.9	3.9

¹ Exclusive of the Yukon and Northwest Territories.

Table 21 shows that in 1961 there was a higher proportion of one- and two-person households than a decade previously and a correspondingly lower proportion of the largest-sized households.

21.—Households classified by Number of Persons, Census Years 1951, 1956 and 1961

Persons per Household	Households			Percentages of Total		
	1951 ¹	1956	1961	1951 ¹	1956	1961
	No.	No.	No.			
1 person.....	252,436	308,613	424,750	7.4	7.9	9.3
2 persons.....	711,110	859,109	1,012,068	20.9	21.9	22.2
3 ".....	688,025	739,390	809,182	20.2	18.8	17.8
4 ".....	645,612	742,363	836,912	18.9	18.9	18.4
5 ".....	439,873	513,821	604,261	12.9	13.1	13.3
6 ".....	268,238	314,040	372,914	7.9	8.0	8.2
7 ".....	158,900	180,603	209,247	4.7	4.6	4.6
8-9 ".....	154,540	169,723	189,447	4.5	4.3	4.2
10 or more persons.....	90,650	95,984	95,955	2.7	2.4	2.1
Totals, Households.....	3,409,284	3,923,646	4,554,736	100.0	100.0	100.0
Average Persons per Household.....	4.0	3.9	3.9	...	...	...

¹ Exclusive of the Yukon and Northwest Territories.

Table 22 gives two classifications of households. The first is by the number of families* they include. While the proportion of one-family households has remained relatively stable since 1951, that of doubled-up families shows a fairly sharp drop from 6.7 p.c. in 1951 to 3.7 p.c. in 1961, a possible indication of an easing in the housing situation. The proportion of non-family households has increased slightly over the ten-year period—from 11.3 p.c. to 13.3 p.c.

The second classification is by number of lodgers. The percentage of households with lodgers has continued to decrease but at a much slower pace between 1956 and 1961 than during the previous five-year period.

* A family, as defined in the census, consists of a husband and wife (with or without children who have never married) or a parent with one or more children never married, living together in the same dwelling. Adopted children and stepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardianship child or ward under 21 years of age.

22.—Households classified by Number of Families and by Number of Lodgers, Census Years 1951, 1956 and 1961

Families or Lodgers	1951		1956		1961	
	No.	P.C. of Total	No.	P.C. of Total	No.	P.C. of Total
Households with—						
0 family.....	385,010	11.3	459,420	11.7	605,801	13.3
1 family.....	2,794,860	82.0	3,259,499	83.1	3,780,992	83.0
2+ families.....	229,425	6.7	204,727	5.2	167,943	3.7
0 lodger.....	3,081,085	90.4	3,610,238	92.0	4,210,953	92.4
1 lodger.....	171,310	5.0	162,067	4.1	207,518	4.6
2 lodgers.....	73,480	2.2	68,950	1.8	67,237	1.5
3+ lodgers.....	83,420	2.4	82,391	2.1	69,028	1.5

The average size of the Canadian family made a further gain between 1956 and 1961, continuing the trend of the 1951-56 period. Every province except Quebec and Saskatchewan participated in this increase, as shown in Table 23.

23.—Families and Persons per Family, by Province, Census Years 1951, 1956 and 1961

Province or Territory	Families			Average Persons per Family		
	1951	1956	1961	1951	1956	1961
	No.	No.	No.	No.	No.	No.
Newfoundland.....	74,858	82,128	89,267	4.4	4.6	4.7
Prince Edward Island.....	21,381	21,153	21,969	4.0	4.1	4.2
Nova Scotia.....	145,127	154,243	161,894	3.9	3.9	4.0
New Brunswick.....	111,639	116,623	124,653	4.1	4.2	4.3
Quebec.....	856,041	970,414	1,103,822	4.2	4.2	4.2
Ontario.....	1,162,772	1,342,572	1,511,478	3.4	3.5	3.6
Manitoba.....	191,268	204,414	215,831	3.6	3.6	3.7
Saskatchewan.....	196,188	205,135	211,776	3.7	3.8	3.8
Alberta.....	223,326	262,922	305,671	3.7	3.7	3.8
British Columbia.....	299,845	346,003	394,023	3.3	3.4	3.6
Yukon and Northwest Territories.....	4,939	5,893	7,060	3.9	4.1	4.3
Canada.....	3,287,384	3,711,500	4,147,444	3.7	3.8	3.9

Closely related to the number of families per household and also an indicator of living conditions, is the type of family. In 1961, 94.3 out of every 100 families in Canada were maintaining their own households as compared with 92.3 in 1956 and 90.2 in 1951, an apparent steady improvement in living conditions. The families not maintaining their own households fell into two main sub-categories—families related to the head of the household and non-related lodging families. The few who did not fit either of these sub-categories were mostly families of employees living in their employer's household. Table 24 shows the 1961 distribution of families according to type.

24.—Families classified by Type and by Province, Census 1961

Province or Territory	Maintaining Own Household	Not Maintaining Own Household				Total Families
		Related	Lodging	Other	Total	
	No.	No.	No.	No.	No.	No.
Newfoundland.....	81,068	6,996	1,139	64	8,199	89,267
Prince Edward Island.....	20,294	1,455	177	43	1,675	21,969
Nova Scotia.....	149,876	9,626	2,012	380	12,018	161,894
New Brunswick.....	116,446	7,032	970	205	8,207	124,653
Quebec.....	1,051,891	42,777	8,222	932	51,931	1,103,822
Ontario.....	1,405,131	61,376	43,500	1,471	106,347	1,511,478
Manitoba.....	204,406	6,030	4,702	693	11,425	215,831
Saskatchewan.....	204,612	4,385	2,154	625	7,164	211,776
Alberta.....	293,609	7,197	3,431	1,434	12,062	305,671
British Columbia.....	377,596	9,936	5,973	518	16,427	394,023
Yukon and Northwest Territories...	6,600	310	136	14	460	7,060
Canada.....	3,911,529	157,120	72,416	6,379	235,915	4,147,444

There were 7,777,137 children in families in 1961. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. In Table 25, the number of children is classified to show the number in each of four separate age groups corresponding roughly to pre-school-age children, those of elementary school age, those at the secondary school level, and those of college or working age.

25.—Children Living at Home classified by Age Group and by Province, Census 1961

Province or Territory	Under 6 Years	6-14 Years	15-18 Years		19-24 Years		Total Children Living at Home
			Total	At School	Total	At School	
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	80,245	109,020	32,582	21,004	16,827	1,522	238,674
Prince Edward Island....	15,550	21,563	6,626	4,465	3,606	600	47,345
Nova Scotia.....	107,627	144,950	45,611	32,907	23,000	4,036	321,188
New Brunswick.....	93,231	131,102	39,668	27,329	19,746	3,660	283,747
Quebec.....	789,382	1,042,937	353,764	209,975	240,275	34,464	2,426,358
Ontario.....	874,318	1,111,981	321,482	245,421	179,622	45,625	2,487,403
Manitoba.....	127,250	169,016	51,530	39,156	26,775	5,883	374,571
Saskatchewan.....	134,502	176,645	53,033	41,991	23,396	5,736	387,576
Alberta.....	212,114	250,672	70,686	57,259	32,882	8,351	566,354
British Columbia.....	220,347	281,698	83,272	68,346	42,081	11,714	627,398
Yukon and Northwest Territories.....	7,158	6,985	1,554	861	826	91	16,523
Canada.....	2,661,724	3,446,569	1,059,808	748,714	609,036	121,682	7,777,137

In Table 26, families are classified by age of family head and in Table 27 they are divided into two groups—those consisting of a husband and wife with or without children, which included 92 p.c. of all families in 1961, and those consisting of one parent only with one or more children. The latter group is classified further according to the marital status and sex of the family head; widowed heads comprised three fifths of the group.

26.—Families classified by Age of Head and by Province, Census 1961

Province or Territory	Under 35 Years	35-44 Years	45-54 Years	55-64 Years	65 Years or Over	Total Families
	No.	No.	No.	No.	No.	No.
Newfoundland.....	24,886	22,014	19,010	11,784	11,573	89,267
Prince Edward Island.....	5,025	4,716	4,735	3,364	4,129	21,969
Nova Scotia.....	42,537	39,003	34,716	21,632	24,006	161,894
New Brunswick.....	32,085	30,708	26,454	16,998	18,408	124,653
Quebec.....	312,469	288,173	233,214	150,472	119,494	1,103,822
Ontario.....	425,113	390,093	312,500	206,638	177,134	1,511,478
Manitoba.....	54,220	52,224	45,868	30,946	32,573	215,831
Saskatchewan.....	51,471	49,743	44,532	30,754	35,276	211,776
Alberta.....	93,062	77,061	60,072	39,648	35,828	305,671
British Columbia.....	101,434	97,652	85,131	52,320	57,486	394,023
Yukon and Northwest Territories...	2,859	1,936	1,247	653	365	7,060
Canada.....	1,145,161	1,053,323	867,479	565,209	516,272	4,147,444

27.—Families classified by Marital Status and Sex of Family Head, by Province, Census 1961

Province or Territory	Families with Husband and Wife at Home	Families with Only One Parent at Home								Total Families
		Widowed Head		Married Head		Divorced Head		Total ¹		
		Male	Female	Male	Female	Male	Female	Male	Female	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland..	80,916	1,496	4,426	621	1,489	7	34	2,224	6,127	89,267
Prince Edward Island.....	19,601	335	1,206	165	541	6	26	540	1,828	21,969
Nova Scotia....	144,326	2,174	8,560	1,436	4,214	125	388	3,955	13,613	161,894
New Brunswick..	112,901	1,572	6,050	871	2,569	78	315	2,620	9,132	124,653
Quebec.....	1,008,004	14,511	53,097	7,709	17,423	211	1,205	23,073	72,745	1,103,822
Ontario.....	1,392,346	12,566	56,454	9,946	31,121	1,016	5,404	24,333	94,799	1,511,478
Manitoba.....	197,146	2,086	9,267	1,267	4,578	125	708	3,647	15,038	215,831
Saskatchewan ..	194,708	2,174	8,627	1,276	3,633	106	470	3,732	13,336	211,776
Alberta.....	282,350	2,294	10,271	1,832	6,046	363	1,554	4,689	18,632	305,671
British Columbia....	361,394	2,828	13,315	2,465	9,335	587	2,877	6,158	26,471	394,023
Yukon and Northwest Territories....	6,334	118	230	91	171	7	24	232	494	7,060
Canada.....	3,800,026	42,154	171,503	27,679	81,120	2,631	13,005	75,203	272,215	4,147,444

¹ Includes a few families with heads never married.

Section 2.—Intercensal Surveys

Intercensal estimates of the populations of Canada and of the provinces have many uses. They are necessary to the calculation of costs of certain economic and social legislation. Business, educational and welfare organizations utilize population estimates in planning future development. They constitute a base for vital statistics rates, per capita figures of production and trade, and other analyses. They also have been found useful for estimating labour force and other population characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply—June 1 of each year. Population estimates by province are also available on a quarter-year basis. The estimates of population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. No complete information is available on emigration. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter on Immigration and Citizenship, Part I, Section 3) and from the Registrar-General of Britain the number of emigrants from Canada arriving by sea to take up permanent residence in that country. Such data, however, are not available from other countries but, as indicated by partial data from United Nations sources, the proportion of total emigrants to all other countries is small. Family allowance statistics showing the number of migrant families by provinces are used in estimating interprovincial shifts in population (see Table 3, p. 159).

The following statement shows the data used in preparing the revised population estimates for the years 1957 to 1960 and the annual estimate for 1962. The next succeeding census serves as a basis for revision of the annual estimates of each intercensal period.

Year	Population at June 1 No.	From June 1 to May 31 of Next Year			
		Births ¹ No.	Deaths ¹ No.	Immigrants No.	Residual ² No.
1956 Census.....	16,081,000	461,000	132,000	255,000	55,000
1957.....	16,610,000	471,000	138,000	194,000	57,000
1958.....	17,080,000	474,000	139,000	116,000	48,000
1959.....	17,483,000	477,000	138,000	106,000	58,000
1960.....	17,870,000	479,000	141,000	89,000	59,000
1961 Census.....	18,238,000	476,000	141,000	70,000	73,000
1962.....	18,570,000	470,000	145,000	79,000	78,000

¹ Final figures used where available and registrations substituted for the remaining period.

² Mainly emigration.

28.—Annual Estimates of Population, by Province, as at June 1, 1951-63

NOTE.—At every census the previous post-censal estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for 1951, 1956 and 1961 are census figures. Figures for 1867-1904 will be found in the 1936 Year Book, p. 141; for 1905-30 in the 1946 edition, p. 127; for 1931-40 in the 1952-53 edition, p. 143; and for 1941-50 in the 1961 edition, p. 165. Figures for 1867-1951 will also be found in *Census of Canada 1961*, Vol. X, Appendix A-4.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1951.....	361	98	643	516	4,056	4,598	776	832	939	1,165	9	16	14,069
1952.....	374	100	653	526	4,174	4,788	798	843	973	1,205	9	16	14,459
1953.....	383	101	663	533	4,269	4,941	809	861	1,012	1,248	9	16	14,845
1954.....	395	101	673	540	4,388	5,116	823	873	1,057	1,295	10	17	15,287
1955.....	406	100	683	547	4,517	5,266	839	878	1,091	1,342	11	18	15,698
1956.....	415	99	695	555	4,628	5,405	850	881	1,123	1,399	12	19	16,081
1957.....	424	99	701	562	4,769	5,636	862	880	1,164	1,482	12	19	16,610
1958.....	432	100	709	571	4,904	5,821	875	891	1,206	1,538	13	20	17,080
1959.....	441	101	719	582	5,024	5,969	891	907	1,248	1,567	13	21	17,483
1960.....	448	103	727	589	5,142	6,111	906	915	1,291	1,602	14	22	17,870
1961.....	458	105	737	598	5,259	6,236	922	925	1,332	1,629	14	23	18,238
1962.....	470	106	746	607	5,366	6,342	935	930	1,370	1,659	15	24	18,570
1963.....	481	107	756	614	5,468	6,448	950	933	1,405	1,695	15	24	18,896

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, estimates for these areas have been prepared as of June 1, 1962. These are shown in Table 29 with the census counts for June 1, 1961; the estimates relate to the boundaries established for the 1961 Census. As in the preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1961 and June 1, 1962 were added to the population at the census date, and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances were made for losses in population by emigration. Also, the net in-movement or out-movement caused by internal migration was calculated from family allowance and other data.

The falling off in the rate of population growth for the whole of Canada between June 1, 1961 and June 1, 1962, caused by declining immigration and a slight fall in the birth rate, is also reflected in the growth rate for the metropolitan areas.

**29.—Estimated Population of Major Metropolitan Areas¹ as at June 1, 1962,
compared with 1961 Census**

Metropolitan Area ²	Census June 1, 1961	Estimate June 1, 1962	Metropolitan Area ²	Census June 1, 1961	Estimate June 1, 1962
	No.	No.		No.	No.
Calgary.....	279,062	290,000	Quebec.....	357,568	366,000
Edmonton.....	337,568	349,000	Toronto.....	1,824,481	1,869,000
Hamilton.....	395,189	399,000	Vancouver.....	790,165	798,000
London.....	181,283	185,000	Windsor.....	193,365	194,000
Montreal.....	2,109,509	2,156,000	Winnipeg.....	475,989	483,000
Ottawa.....	429,750	446,000			

¹ With 100,000 or more population in the city proper at the 1961 Census.

² Areas as of the 1961 Census.

Table 30 gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1962. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 181. These estimates are subject to revision as soon as data from the next census are available.

**30.—Estimated Population classified by Age Group and Sex, by Province,
as at June 1, 1962**

Province or Territory	0-4 Years		5-9 Years		10-14 Years		15-19 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	35.6	34.3	32.5	31.8	31.2	30.1	23.6	23.5
Prince Edward Island.....	6.8	6.6	6.2	6.0	6.3	6.1	4.9	4.6
Nova Scotia.....	47.0	45.0	43.8	41.5	41.8	39.9	34.7	32.6
New Brunswick.....	40.7	38.7	38.6	37.0	37.8	36.5	29.3	27.9
Quebec.....	343.7	328.7	323.2	309.4	297.3	285.2	248.0	242.0
Ontario.....	386.1	367.4	349.3	333.6	315.6	300.0	237.1	225.9
Manitoba.....	55.9	53.4	52.1	49.8	47.8	46.0	38.1	36.3
Saskatchewan.....	58.5	56.1	54.9	52.2	49.3	47.4	38.9	36.9
Alberta.....	94.8	90.3	83.6	79.1	70.3	67.0	53.4	51.3
British Columbia.....	96.7	92.5	89.1	85.2	80.0	76.8	61.5	58.5
Yukon Territory.....	1.3	1.2	0.9	0.9	0.7	0.6	0.4	0.4
Northwest Territories.....	2.2	2.1	1.6	1.5	1.3	1.3	0.9	0.8
Canada.....	1,169.3	1,116.1	1,075.8	1,028.0	979.4	936.9	770.8	740.7
	20-24 Years		25-34 Years		35-44 Years		45-54 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	16.2	16.0	27.5	25.1	25.9	23.3	21.6	19.1
Prince Edward Island.....	3.5	3.2	5.6	5.3	5.7	5.6	5.6	5.1
Nova Scotia.....	26.4	24.5	43.8	42.6	44.1	44.8	40.1	37.3
New Brunswick.....	19.8	19.5	33.2	33.4	34.6	35.0	29.8	28.0
Quebec.....	188.4	195.8	364.6	369.0	336.4	344.5	261.7	262.1
Ontario.....	192.0	197.8	438.3	427.2	440.3	442.4	347.6	336.4
Manitoba.....	30.3	29.8	59.3	56.4	59.8	61.3	52.0	50.6
Saskatchewan.....	29.2	28.3	56.7	53.2	57.9	56.7	51.1	47.5
Alberta.....	44.9	45.6	100.4	92.9	89.9	87.3	69.1	64.1
British Columbia.....	48.7	48.7	109.5	101.8	110.7	115.1	96.1	94.0
Yukon Territory.....	0.6	0.4	1.7	1.2	1.3	1.0	0.7	0.5
Northwest Territories.....	1.2	0.9	2.5	1.7	1.6	1.1	1.1	0.7
Canada.....	601.2	610.5	1,243.1	1,209.8	1,208.2	1,218.1	976.5	945.4

**30.—Estimated Population classified by Age Group and Sex, by Province,
as at June 1, 1962—concluded**

Province or Territory	55-64 Years		65-69 Years		70 + Years		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	13.1	12.2	4.9	4.9	8.9	8.7	241.0	229.0
Prince Edward Island.....	4.1	3.7	1.8	1.8	3.6	3.9	54.1	51.9
Nova Scotia.....	26.4	25.4	10.4	10.9	20.2	22.8	378.7	367.3
New Brunswick.....	19.9	19.7	8.0	8.2	15.0	16.4	306.7	300.3
Quebec.....	173.0	178.2	57.7	61.9	90.3	104.9	2,684.3	2,681.7
Ontario.....	243.6	243.5	86.9	95.4	148.3	187.5	3,185.1	3,156.9
Manitoba.....	36.7	34.9	14.1	14.0	28.5	27.9	474.6	460.4
Saskatchewan.....	36.9	32.1	14.8	12.9	32.4	26.1	480.6	449.4
Alberta.....	49.4	41.4	17.2	14.9	34.3	28.8	707.3	662.7
British Columbia.....	66.5	60.5	24.6	25.6	59.6	57.3	843.0	816.0
Yukon Territory.....	0.5	0.3	0.1	0.1	0.2	—	8.4	6.6
Northwest Territories.....	0.6	0.4	0.2	0.1	0.1	0.1	13.3	10.7
Canada.....	670.7	652.3	240.7	250.7	441.4	484.4	9,377.1	9,192.9

Section 3.—The Native Peoples of Canada

The Indians*

Approximately one of every hundred Canadians is registered as an Indian by the Department of Citizenship and Immigration. This number includes all persons with a paternal ancestor of Indian race who have chosen to remain under Indian legislation. In the aggregate, the Indians are grouped into 556 bands and occupy or have access to 2,239 reserves having a total area of 5,918,279 acres.

About 26 p.c. of the Indians reside away from reserves, including those in the Yukon and Northwest Territories for whom reserves have not been set aside. Many Indians, both on and off reserves, have specialized in various professions, trades and agricultural pursuits. Others have fitted into the economy of the areas in which they live in a wide range of occupations. More than 260 Indians are employed by the Indian Affairs Branch of the Department of Citizenship and Immigration, 111 of them as teachers. In the northern and other outlying areas, hunting, fishing and trapping remain an important means of livelihood for Indians.

Subject to special provisions in the Indian Act, all laws of general application are applicable to Indians. Indians are liable for taxation of property held off a reserve as well as of any income they earn off a reserve. They may vote in federal elections on the same basis as other citizens and in provincial elections where the electoral laws of the provinces permit. Indians are free to enter into contractual obligations and may sue and be sued. However, their real and personal property situated on a reserve is exempt from seizure except on suit by another Indian.

* Revised in the Information Division, Department of Citizenship and Immigration, Ottawa.

31.—Indian Land in Reserves and Number of Bands, by Province, as at Mar. 31, 1962

Province or Territory	Bands	Reserves	Total Area
	No.	No.	acres
Prince Edward Island.....	1	4	2,741
Nova Scotia.....	11	43	25,404
New Brunswick.....	15	23	37,671
Quebec.....	41	26	178,971
Ontario.....	111	163	1,555,732
Manitoba.....	50	107	524,015
Saskatchewan.....	67	120	1,207,250
Alberta.....	41	87	1,561,868
British Columbia.....	189	1,619	817,957
Yukon Territory.....	14	21 ¹	4,739
Northwest Territories.....	16	26 ¹	1,931
Totals.....	556	2,239	5,918,279

¹ Indian settlements only.

A Departmental census of Indian population is taken every five years and the numbers recorded at the three latest censuses—1949, 1954 and 1959—are given in Table 32; the figures for 1960 and 1961 are taken from band membership lists kept for administrative purposes by the Indian Affairs Branch.

32.—Indian Population, by Province, Departmental Censuses 1949, 1954 and 1959 and Estimates 1960 and 1961

Province or Territory	1949	1954	1959	1960 ¹	1961 ¹
	No.	No.	No.	No.	No.
Prince Edward Island.....	273	272	341	343	348
Nova Scotia.....	2,641	3,002	3,561	3,630	3,746
New Brunswick.....	2,139	2,629	3,183	3,280	3,397
Quebec.....	15,970	17,574	20,453	21,154	21,970
Ontario.....	34,571	37,255	42,668	43,767	44,765
Manitoba.....	17,549	19,684	23,658	24,608	25,681
Saskatchewan.....	16,308	18,750	23,280	24,278	25,334
Alberta.....	13,805	15,715	19,287	20,053	20,931
British Columbia.....	27,936	31,086	36,229	37,375	38,616
Yukon Territory.....	1,443	1,568	1,868	1,923	2,006
Northwest Territories.....	3,772	4,023	4,598	4,758	4,915
Totals.....	136,407	151,558	179,126	185,169	191,709

¹ As at Dec. 31.

The 1959 Indian population in each province is classified by age group and sex in Table 33. The rapid growth of that population in recent years is indicated by the fact that in 1959 more than 56 p.c. of the Indians were under 21 years of age compared with 42 p.c. of the population of Canada as a whole. Religious denominations of the Indian population are given in Table 34.

33.—Indian Population classified by Age Group and Sex, by Province, Departmental Census 1959

Province or Territory	0-5 Years		6-15 Years		16-20 Years		21-64 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	36	28	32	36	23	17	80	66
Nova Scotia.....	329	291	462	460	177	162	763	645
New Brunswick.....	363	335	414	404	144	146	673	549
Quebec.....	1,805	1,851	2,314	2,293	918	945	4,764	4,280
Ontario.....	4,057	3,992	5,224	5,108	1,989	2,049	9,220	8,147
Manitoba.....	2,765	2,709	3,195	3,121	1,148	1,127	4,633	3,916
Saskatchewan.....	2,888	2,867	3,063	3,080	1,071	1,098	4,334	3,956
Alberta.....	2,386	2,313	2,563	2,661	901	980	3,537	3,110
British Columbia.....	3,955	3,994	4,866	4,740	1,808	1,840	7,235	6,214
Yukon Territory.....	215	191	215	258	83	89	380	332
Northwest Territories.....	428	485	566	527	203	223	1,002	869
Totals.....	19,227	19,056	22,914	22,688	8,465	8,676	36,621	32,094
	65-69 Years		70 + Years		Not Stated		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	2	2	5	5	2	7	180	161
Nova Scotia.....	34	23	57	45	47	66	1,869	1,692
New Brunswick.....	23	17	41	33	16	25	1,674	1,509
Quebec.....	242	159	354	345	47	136	10,444	10,009
Ontario.....	403	343	788	699	213	436	21,894	20,774
Manitoba.....	179	149	317	320	15	64	12,252	11,406
Saskatchewan.....	194	136	290	254	6	43	11,846	11,434
Alberta.....	170	90	243	216	43	74	9,843	9,444
British Columbia.....	293	226	542	460	10	46	18,709	17,520
Yukon Territory.....	8	21	37	37	—	2	938	930
Northwest Territories.....	57	36	77	86	16	23	2,349	2,249
Totals.....	1,605	1,202	2,751	2,500	415	922	91,998	87,128

34.—Religious Denominations of the Indian Population, by Province, Departmental Census 1959

Province or Territory	Anglican	Baptist	United Church	Presbyterian	Roman Catholic	Other Christian Beliefs	Aboriginal	Not Stated	All Denominations
	No.	No.	No.	No.	No.	No.	No.	No.	No.
P.E.I.....	—	—	—	—	340	—	—	1	341
N.S.....	—	—	6	—	3,531	2	—	22	3,561
N.B.....	—	—	1	—	3,022	—	—	160	3,183
Que.....	3,952	5	784	2	14,827	219	215	449	20,453
Ont.....	12,232	2,865	6,836	892	14,734	674	2,501	1,934	42,668
Man.....	6,999	—	5,899	1,025	9,126	306	82	221	23,658
Sask.....	6,915	54	2,015	366	12,462	59	1,170	239	23,280
Alta.....	2,436	143	2,127	26	13,853	437	58	207	19,287
B.C.....	6,900	—	6,852	6	21,077	1,117	—	277	36,229
Yukon.....	1,331	93	—	—	438	—	—	6	1,868
N.W.T.....	778	—	—	1	3,553	—	—	286	4,598
Totals.....	41,543	3,160	24,520	2,318	96,963	2,814	4,026	3,782	179,126

Administration.—Pursuant to the British North America Act, the administration of Indian Affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada. Since January 1950, Indian affairs have been the responsibility of a Branch of the Department of Citizenship and Immigration.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, nine regional offices, and 89 field agencies. Specialists in such matters as education, economic development, resource management, social welfare, and engineering and construction are attached to headquarters and regional staffs. Liaison is maintained with the Indian and Northern Health Services of the Department of National Health and Welfare, the federal agency concerned with the medical care of Indians.

It is the primary function of the Indian Affairs Branch to administer the affairs of Indians in a manner that will enable them to participate fully in the social and economic life of the country. To this end, the Branch has brought into effect a wide range of programs in the fields of education, economic development, social welfare and community development. Underlying administrative duties of the Branch include the management of Indian reserves and surrendered lands, the administration of band funds, estates management, enfranchisement of Indians and the administration of treaty obligations.

Education.—Nearly 46,600 Indians are enrolled in schools throughout the country. Approximately one third of these attend provincial and private schools, the cost of tuition being assumed by the Federal Government. As a further encouragement to the integration of Indian children in non-Indian schools, grants are made toward the cost of any new or supplementary construction required by their admission.

There are four types of Indian schools, all operated at the expense of the Government. On most reserves, day schools have been established to provide education for children who live at home. Residential schools are operated to care for orphaned children, children from broken homes, and for those who, because of isolation or other reasons, are unable to attend day schools. Seasonal schools have been established for the children of migratory families, particularly in the Far North. The fourth type of school gives instruction to children confined to hospital.

All standard classroom supplies and authorized textbooks are provided in Indian schools. Financial assistance for pupils attending non-Indian schools varies from payment of tuition fees for some to full maintenance for others. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

35.—Enrolment of Indian Pupils classified by Type of School and by Grade, School Year 1961-62

Classification	Grade				Technical	Professional	Total
	Kinder- garten	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
Day school ¹	2,595	16,250	1,969	82	—	—	20,896
Residential school boarders attending classes at residential schools.....	466	6,293	1,127	505	—	—	8,391
Day pupils attending classes at residential schools..	342	1,713	265	9	—	—	2,329
Seasonal school.....	...	...	...	...	...	...	512
Hospital school.....	...	...	...	...	...	...	227
Provincial, private or territorial school.....	157	8,490	2,337	2,785	354	118	14,241 ²
Totals.....	3,560	32,746	5,698	3,381	354	118	46,596²

¹ Includes resident boarders attending Indian day schools, numbering 324.
of school age for whom full information is not available.

² Excludes 1,616 children

36.—Indian Pupils Attending Provincial, Private or Territorial Schools, classified by Grade or Type of Training, by Province, School Year 1961-62

Grade or Type of Training	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Pre-Grade 1.....	—	12	—	21	28	39	22	—	35	—	—	157
Grade—												
1.....	—	12	3	106	249	155	234	141	610	322	26	1,858
2.....	—	21	2	95	208	130	193	131	486	204	22	1,492
3.....	1	13	3	110	219	107	160	123	421	140	20	1,317
4.....	1	19	6	107	227	83	158	132	393	138	19	1,283
5.....	1	27	11	126	251	105	130	123	389	98	49	1,310
6.....	—	23	18	150	254	102	98	140	326	78	41	1,230
7.....	1	31	25	152	246	101	80	125	443	38	43	1,285
8.....	—	14	19	208	176	81	69	78	344	28	35	1,052
9.....	4	30	21	105	414	69	131	144	395	18	18	1,349
10.....	—	11	8	60	204	56	55	36	259	5	11	705
11.....	—	17	8	84	107	17	34	32	167	3	4	423
12.....	—	9	5	7	72	6	29	36	107	4	3	278
13.....	—	—	—	—	20	—	—	—	10	—	—	30
University—												
1st year.....	—	2	1	10	2	—	2	1	7	—	—	25
2nd year.....	—	1	1	3	1	2	—	—	1	—	—	9
3rd year.....	1	1	1	3	2	—	—	—	—	—	—	8
4th year.....	—	—	—	3	—	—	1	—	—	—	—	4
Law.....	—	—	—	—	1	—	—	—	1	—	—	2
Medical.....	—	—	—	1	1	—	—	—	—	—	—	2
Teacher training....	—	—	—	8	10	1	3	—	3	—	—	25
Nurse training.....	—	2	—	1	7	2	4	2	2	—	—	20
Nurses' aide.....	—	—	—	1	3	—	3	5	11	—	—	23
Commercial.....	—	4	3	3	14	6	11	10	12	15	—	78
Trades.....	1	16	14	14	29	12	24	8	26	11	—	155
Blind and deaf.....	—	1	—	2	12	10	4	1	4	2	—	36
Other.....	—	—	—	—	44	13	5	5	18	—	—	85
Totals.....	10	266	149	1,330	2,801	1,097	1,450	1,273	4,470	1,104	291	14,241
Not graded.....	—	71	—	277	968	7	63	43	187	—	—	1,616

Economic Development.—With a view to providing for all Indians the opportunity to earn satisfactory incomes, the Indian Affairs Branch has instituted a number of programs in the field of economic development. These programs give special attention to the placement of Indians in employment; the promotion of agriculture and stock-raising on reserves; the fostering of Indian enterprise and the provision of loans; home industries and handicrafts; the management of fur, fish and wildlife resources; and assistance to Indians in developing other resources on or within access of the reserves.

The Employment Placement Program has the objective of developing job opportunities for Indians and promoting their employment in a wider range of occupations. Placement Officers are attached to Branch Regional Offices at Vancouver, Edmonton, Saskatoon, Winnipeg, North Bay, Toronto, Quebec, Amherst and Fort Smith, and are also located at The Pas, London, Calgary and Whitehorse. In addition, the facilities of the National Employment Service are utilized in placing Indians in both urban and rural employment.

Under the fur resources rehabilitation and management program, which has been carried on for some time in co-operation with various provinces, beaver production in Saskatchewan, Manitoba, Ontario and Quebec has risen steadily. Total Indian income from trapping in the 1961-62 season was approximately \$6,750,000.

Commercial fishing by Indians is also of considerable economic importance. In recent years, the lake catch has been valued at approximately \$1,000,000 per annum and coastal fishing at about \$4,000,000 per annum, with further yearly earnings of about \$750,000 from the packing, canning and processing of fish products.

A \$1,000,000 revolving fund has been set aside by the Government as a source of credit for reserve Indians. During the year ended Mar. 31, 1962, 120 loans totalling \$177,029 were approved, most of them for agricultural purposes.

Welfare.—A public assistance program is provided by the Indian Affairs Branch to assist Indians to realize an adequate standard of living. Training and selected placement facilities are available in the field of rehabilitation for the physically and socially handicapped. Indians are technically subject to provincial law which governs all aspects of child welfare but there is wide variation in the extent to which such legislation is enforced. However, the policy followed is designed to take advantage, on an increasing basis, of the co-operation and assistance of accredited provincial child-caring agencies. Housing is another important feature of Indian welfare services. In each of the three years ended Mar. 31, 1960-62, more than 1,200 houses were built on Indian reserves and, in the year ended Mar. 31, 1962, approximately 3,000 houses were repaired.

37.—Housing on Indian Reserves, by Region, Year Ended Mar. 31, 1962

Region	Houses			Expenditures				
	Started before, Completed during Year	Started and Completed during Year	Started during Year but Not Completed	From Welfare Appropriation	From Band Funds	From VLA Grant	Personal Contributions	Total
	No.	No.	No.	\$	\$	\$	\$	\$
Maritime Provinces.....	8	22	7	77,766	—	4,640	12,800	95,206
Quebec.....	4	92	40	276,701	300	1,257	120,353	398,611
Ontario—								
Southern.....	35	56	29	119,146	89,552	4,495	67,321	270,513
Northern.....	19	104	15	282,832	57,069	2,182	52,460	394,544
Manitoba.....	31	179	4	287,094	9,409	4,368	80,531	381,402
Saskatchewan.....	22	210	44	383,702	87,911	1,512	60,542	533,667
Alberta.....	23	172	37	248,423	577,194	—	32,955	858,572
British Columbia and Yukon Territory.....	51	185	122	451,760	169,298	—	214,510	835,568
Northwest Territories—District of Mackenzie...	28	25	10	127,340	—	—	20,357	147,697
Canada.....	221	1,045	308	2,254,763	989,733	18,455	661,829	3,924,780

Every effort is made to reach agreement with provincial governments which will make possible the application of normal provincial welfare services and benefits on reserves. Several bands in Ontario now participate in the Ontario General Welfare Assistance Act. Throughout Canada, Indians are paid family allowances, old age security, old age assistance, blind persons' allowances and disabled persons' allowances, and in the Provinces of Ontario and Quebec mothers' allowances are available to needy Indian mothers.

Community Development.—Community development on Indian reserves is progressing under the auspices of the Indian Affairs Branch. Leadership training courses are conducted to help Indians to identify and understand community problems and to become familiar with accepted methods of community organization. Indian women are encouraged to form Homemakers' Clubs which are patterned after rural women's institutes. Counselling as well as material aid is provided. Indian band councils are encouraged to exercise, to the fullest extent, the powers and responsibilities granted to them under the Indian Act.

In recent years, the Indian Affairs Branch has had the co-operation and assistance of university extension departments, provincial education authorities and various health and welfare organizations in the conduct of community development programs. An intensive program in community action by Indians on all reserves on Cape Breton Island, N.S., and certain reserves in New Brunswick has been directed by the Extension Department of St. Francis Xavier University. Leadership training courses for Indians have been held annually under the auspices of the Community Welfare Planning Council, Winnipeg, Man. Universities are assisting in planning and developing programs for Indian groups in Alberta, British Columbia, the Maritimes, Ontario and Quebec. In Ontario, the Community Programs Branch of the provincial Department of Education has planned and organized a special leadership training course for Indian band chiefs and councillors.

The Eskimos*

While many still hold to the traditional way of life, an ever-increasing number of Canada's 11,835 Eskimos living in the Northwest Territories, northern Quebec and Labrador are making the change from a nomadic existence to a pattern of regular wage employment. Continued northern development, coupled with a decrease in some types of game, is settling the Eskimo people more and more in modern communities with school, health and transportation facilities, and wage employment opportunities. The Government of Canada, through the Department of Northern Affairs and National Resources and other agencies, is helping in this transition and adjustment by providing such forms of assistance as education, welfare services, vocational training and economic development programs.

One of the prime aids in easing this transitional period and preparing for the future is education. Close to 2,400 Eskimo youngsters now spend the school term at desks; more than half of them live in student residences. In 1958 only 17 p.c. of Eskimo children were in school; now, with the improvement of facilities and despite the increase in population, almost 66 p.c. are in school. Because of the relative newness of the school system the majority of these children are in the junior grades but increasing awareness of the value of education is keeping them in schools longer. A program approved at the January 1963 session of the Northwest Territories Council provides for grants and loans to finance university education for Eskimo, Indian and white children, without distinction.

While a basic education will open doors to employment for many, it is not the only avenue provided. Vocational training classes offer opportunities for employment in carpentry, electronics, mining, automobile and diesel mechanics, and domestic science. On-the-job learning is showing adult members of the Eskimo community how to make a better living in a changing world, and how to better use traditional skills and natural resources.

One of the most encouraging developments in the Arctic has been the steadily improving success of Eskimo co-operatives, formed on the basis of pooled labour and shared harvest, a formula long known to the Eskimos. Sixteen co-operatives in the Northwest Territories and northern Quebec are now engaged in a variety of operations based on commercial fishing, handicraft production, carving and graphic arts, tourism and the operation of retail stores. During 1962, five Eskimo fishing co-operatives were catching, processing and shipping Arctic char to markets in Southern Canada and the United States; the first shipment of char was sent to Britain in mid-year. Soapstone carvings and graphic arts, maintained at a standard of excellence, continued to bring the Eskimos, and Canada too, world-wide recognition. In 1962, approximately \$100,000 worth of graphic arts was sold by the Cape Dorset Co-operative alone. An increasing number of handicrafts, ranging from small sealskin animals and toys to delicately embroidered duffel coats, were produced to satisfy the growing market in Southern Canada. Although not attracting as much attention as the graphic arts or carvings, co-operatives based on logging, boat building and sealing also provided valuable business experience, employment and wages.

* Prepared in the Editorial and Information Division, Department of Northern Affairs and National Resources, Ottawa.

In addition to providing business experience and work opportunities, vital for a feeling of independence, the co-operatives also brought in more than \$200,000 cash to northern communities during 1961. This amount was considerably higher, if not doubled, in 1962. Through participation in rehabilitation projects which produce and market a wide variety of goods and services, an additional \$175,000 was earned by people in the North during 1962.

The increasing number of settled wage earners has created a need for permanent homes. Through a program of loans and grants initiated by the Department of Northern Affairs and National Resources, more and more Eskimos now own their homes. A \$1,000 subsidy covers part of the cost; the owner may borrow the remainder from the Eskimo Loan Fund and repay it on terms adjusted to his income. A man's labour in constructing his house helps to keep the cost to a minimum. All financial arrangements encourage the Eskimo to remain self-reliant and independent under changing economic conditions. At Frobisher Bay, a group of 15 families has established a co-operative which aims to provide all members with adequate housing. Other housing is provided as a relief measure to help those who, through physical or other disability, cannot afford to pay for their own shelter.

As Canadian citizens, the Eskimos receive the same social benefits as those who live farther south—family allowances, old age security, old age assistance, blind and disabled persons' allowances. The Federal Government also operates family and child welfare services and a rehabilitation and medical social service program designed to strengthen family and community life. Tuberculosis has not been eradicated but the incidence of the disease is rapidly decreasing. While the Eskimo infant mortality rate remains high compared with the all-Canada rate, it, too, is dropping with the improvement of health facilities and housing.

In addition to those Eskimos self-employed as members of co-operatives, there are Eskimos with employment in a variety of fields. They work as civil servants and as DEW-line employees. Eskimos are clergymen, miners, carpenters, mechanics, diesel and tractor operators and oil drillers. An Eskimo is manager of the CBC radio station at Inuvik and an Eskimo girl produces Eskimo-language programs for the CBC Northern Service. Another Eskimo girl, employed by the Welfare Division of the Northern Administration Branch, edits the Eskimo-language publication *Inuktitut*. Other Eskimo women work as interpreters, waitresses, nursing assistants, secretaries and clerks—in southern as well as northern communities.

With the continuing development of Northern Canada and the many changes it is bringing, more responsibility and opportunity have come to the Eskimos. In June 1962, for the first time, Eskimos of voting age in the Franklin and Keewatin Districts were able to cast their ballots in a federal election and returns showed that a majority of the Eskimos had taken advantage of the opportunity. In connection with the proposed division of the Northwest Territories, the Eskimo and other residents of the Eastern Arctic were asked to select the name of the new territory to be created. Ballots were cast and the name decided—*Numassiaq—The Beautiful Land*.

For countless years the Eskimo has survived in a land that many have called harsh and unyielding. Circumstances have changed, however, and both are now on the threshold of even greater change. Adapting to a new environment, learning new trades and skills, Canada's hardy and intelligent Eskimos will play a more important role in the development of the country's last and most challenging frontier.

Section 4.—Statistics of World Population

World population figures given in Table 38 are from the United Nations *Population and Vital Statistics Report* for October 1962 and, except as otherwise noted, are mid-year estimates for 1961. The area figures are from the United Nations *Statistical Yearbook, 1961*.

Estimated Population of the World by Continents.—The statement below presents adjusted estimates of the 1961 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries and territories because they include, in addition, adjustments for over- and under-enumeration, over-estimation, data for categories of population not regularly included in the official figures, and approximations for those countries that have not provided official 1961 data. The estimates are as follows:—

<i>Continental Division</i>	<i>Number</i>
	'000
Africa.....	261,000
North America.....	273,000
South America.....	148,000
Asia (includes Asiatic Turkey).....	1,714,000
Europe (includes European Turkey).....	430,000
Oceania (includes Hawaii).....	17,000
Union of Soviet Socialist Republics (Asia and Europe).....	218,000
WORLD TOTAL.....	3,061,000
Commonwealth countries (at Mar. 15, 1963).....	733,531

38.—Areas and Populations of the Countries or Areas of the World, 1961

NOTE.—Status of independency or dependency is as at Mar. 15, 1963. Members of the Commonwealth and the Territories for which the British or Commonwealth members are responsible (at Mar. 15, 1963) are indicated with an asterisk (*).

Continent and Country	Area	Population
	sq. miles	'000
Africa		
INDEPENDENT STATES		
Algeria.....	919,593	11,240
Burundi ¹		2,234 ²
Cameroon.....	183,569	4,097 ²
Central African Republic.....	238,224	1,227
Chad.....	495,754	2,680
Congo (Brazzaville).....	132,047	900 ²
Congo (Leopoldville).....	905,585	14,450
Dahomey.....	44,696	2,050 ²
Ethiopia.....	457,267	20,000 ²
Gabon.....	103,089	448 ²
*Ghana.....	91,844	6,943
Guinea.....	94,926	3,000 ²
Ivory Coast.....	124,503	3,300
Liberia.....	43,000	1,290 ²
Libya.....	679,360	1,216
Madagascar.....	227,800	5,577
Mali.....	464,874	4,100 ²
Mauritania.....	419,230	791 ²
Morocco.....	171,305	11,925
Niger.....	458,995	3,112 ²
*Nigeria.....	356,669	35,752
Rwanda ¹		2,695 ²
Senegal.....	76,124	2,980
*Sierra Leone.....	27,925	2,450
Somalia.....	246,202	2,030
South Africa, excl. Walvis Bay.....	472,359	16,236
Sudan.....	967,501	12,109
*Tanganyika.....	361,800	9,399
Togo.....	21,853	1,480
Tunisia.....	48,332	4,254
*Uganda.....	93,981	6,845
United Arab Republic (former Egyptian region).....	386,101	26,578
Upper Volta.....	105,869	4,400 ²

For footnotes, see end of table, p. 197.

38.—Areas and Populations of the Countries or Areas of the World, 1961—continued

Continent and Country	Area	Population
	sq. miles	'000
Africa—concluded		
TERRITORIES AND DEPENDENCIES		
Britain—		
*Basutoland.....	11,716	697
*Bechuanaland.....	275,000	340
*Gambia.....	4,003	290
*Kenya.....	224,960	7,287
*Mauritius, incl. dependencies.....	720	676
*Rhodesia and Nyasaland, Federation of.....	484,529	8,520
Northern Rhodesia.....	288,190	2,480
Nyasaland.....	46,066	2,890
Southern Rhodesia.....	150,333	3,150
*St. Helena, excl. dependencies.....	47	5
Ascension.....	34	3
Tristan da Cunha and other dependencies.....	81	3
*Seychelles.....	156	43
*Swaziland.....	6,704	266
*Zanzibar and Pemba.....	1,020	315
France—		
Comoro Islands.....	838	185
French Somaliland.....	8,494	68
French Southern and Antarctic Territories.....	2,918	3
Réunion.....	969	346
Portugal—		
Angola.....	481,352	4,870
Cape Verde Islands.....	1,557	205
Mozambique.....	302,329	6,650
Portuguese Guinea.....	13,948	550
São Tomé and Príncipe.....	372	64
Spain—		
Iñi.....	579	50
Spanish Equatorial Region.....	10,831	249
Spanish North Africa.....	82	155
Spanish Sahara.....	102,703	25
FORMER MANDATED TERRITORY		
(South Africa)		
South West Africa, incl. Walvis Bay.....	318,261	534
America, North		
INDEPENDENT STATES		
*Canada.....	3,851,809	18,269
Costa Rica.....	19,575	1,225
Cuba.....	44,218	6,933
Dominican Republic.....	18,816	3,098
El Salvador.....	8,260	2,501 ²
Guatemala.....	42,042	3,886
Haiti.....	10,714	4,249
Honduras.....	43,277	1,892
*Jamaica.....	4,411	1,638
Mexico.....	760,375	36,091
Nicaragua.....	57,143	1,526
Panama.....	28,753	1,084
*Trinidad and Tobago.....	1,980	859
United States of America.....	3,615,214	183,742 ⁴
TERRITORIES AND DEPENDENCIES		
Britain—		
*Antigua.....	171	55
*Bahama Islands.....	4,400	108
*Barbados.....	166	236

For footnotes, see end of table, p. 197.

38.—Areas and Populations of the Countries or Areas of the World, 1961—continued

Continent and Country	Area	Population
	sq. miles	'000
America, North—concluded		
TERRITORIES AND DEPENDENCIES—concluded		
Britain—concluded		
*Bermuda.....	20	43
*British Honduras.....	8,866	93
*Cayman Islands.....	100	8
*Dominica.....	305	61
*Grenada.....	133	90
*Montserrat.....	32	13
*St. Kitts-Nevis and Anguilla.....	153	59
*St. Lucia.....	238	87
*St. Vincent.....	150	82
*Turks and Caicos Islands.....	166	6
*Virgin Islands (Br.).....	67	8
Denmark—		
Greenland.....	840,001	35
France—		
Guadeloupe and dependencies.....	687	276
Martinique.....	425	283
St. Pierre and Miquelon.....	93	5
Netherlands—		
Netherlands Antilles.....	371	194
United States—		
Canal Zone.....	553	42
Puerto Rico.....	3,435	2,406
Virgin Islands (U.S.).....	133	34
America, South		
INDEPENDENT STATES		
Argentina.....	1,072,070	21,079
Bolivia.....	424,163	3,500
Brazil.....	3,287,204	73,088 ⁵
Chile.....	286,397	7,827
Colombia.....	439,513	14,443
Ecuador.....	104,506	4,455 ⁵
Paraguay.....	157,047	1,812
Peru.....	496,223	10,365 ⁵
Uruguay.....	72,172	2,846 ²
Venezuela.....	352,143	7,590 ⁵
TERRITORIES AND DEPENDENCIES		
Britain—		
*British Guiana.....	83,000	582
*Falkland Islands, excl. dependencies.....	4,618	2
France—		
French Guiana.....	35,135	32
Netherlands—		
Surinam.....	55,144	280 ⁶
Asia		
INDEPENDENT STATES		
Afghanistan.....	250,966	13,800 ²
Bahrain.....	231	152
*Bhutan.....	19,305	680
Burma.....	261,789	21,527

For footnotes, see end of table, p. 197.

38.—Areas and Populations of the Countries or Areas of the World, 1961—continued

Continent and Country	Area	Population
	sq. miles	'000
Asia—concluded		
INDEPENDENT STATES—concluded		
Cambodia.....	66,607	4,952 ²
*Ceylon.....	25,332	10,167
China (mainland).....	3,691,512	646,530 ²
China (Taiwan and Pescadores).....	13,885	10,971 ⁷
*Cyprus.....	3,572	581
*India.....	1,173,832	441,469 ⁸
Indonesia.....	575,894	95,655
Iran.....	636,294	20,678
Iraq.....	171,600	7,263
Israel.....	7,992	2,183
Japan.....	142,726	94,050
Jordan.....	37,301	1,690 ²
Korea.....	85,286	33,805
North Korea.....	47,255	8,430
Republic of Korea.....	38,031	25,375
Kuwait.....	6,000	322
Laos.....	91,429	1,850
Lebanon.....	4,015	1,046 ²
*Malaya, Federation of.....	50,700	7,137
*Maldives Islands.....	115	89
Mongolia.....	592,665	968
Muscat and Oman.....	52,000	565
Nepal.....	54,362	9,388
*Pakistan, excl. Kashmir-Jammu.....	364,737	94,547
Philippines.....	115,707	28,727
Qatar.....	8,500	65
Saudi Arabia.....	617,762	6,036 ²
Sikkim.....	2,744	162
Syria.....	71,228	4,930
Thailand.....	198,456	27,181
Trucial Oman.....	32,278	86
Turkey (Asia and Europe).....	301,351	28,602 ²
Viet Nam—		
North Viet Nam.....	59,934	16,690
Republic of Viet Nam.....	65,948	14,520
Yemen.....	75,290	5,000 ³
TERRITORIES AND DEPENDENCIES		
Britain—		
*Aden—		
Aden Colony.....	75	210
Aden Protectorate.....	111,000	1,000
*Brunei.....	2,226	87
*Hong Kong.....	398	3,178
*North Borneo.....	29,388	460
*Sarawak.....	48,342	760
*Singapore.....	224	1,687
Netherlands—		
West New Guinea (West Irian).....	160,618	750
Portugal—		
Macau.....	6	169
Portuguese India.....	1,619	626
Portuguese Timor.....	5,763	520
FORMER MANDATED TERRITORY		
(Britain)		
Palestine.....	10,459	1,912 ²
Gaza Strip.....	78	368
MILITARY GOVERNMENT		
(United States)		
Bonin Islands.....	40	3
Ryukyu Islands.....	848	889

For footnotes, see end of table, p. 197.

38.—Areas and Populations of the Countries or Areas of the World, 1961—continued

Continent and Country	Area	Population
	sq. miles	'000
Europe		
INDEPENDENT STATES		
Albania.....	11,100	1,660
Andorra.....	175	9
Austria.....	32,374	7,081
Austria.....	11,779	9,203
Belgium.....	94,217	52,925
*Britain.....	58,347	46,869
England and Wales.....	5,459	1,430
Northern Ireland.....	30,411	5,286
Scotland.....	42,729	7,943
Bulgaria.....	49,367	13,776
Czechoslovakia.....	16,619	4,617
Denmark.....	130,120	4,467
Finland.....	212,822	45,960
France (Metropolitan).....	41,649	16,061
Germany—	95,735	54,027
Eastern Germany.....	156	1,064
Federal Republic of Germany.....	186	2,198
East Berlin.....	50,548	8,394
West Berlin.....	9	1
Greece.....	35,919	10,028
Holy See.....	39,768	179
Hungary.....	27,136	2,815
Iceland.....	116,304	49,455
Ireland.....	61	17
Italy.....	998	317
Liechtenstein.....	9	22
Luxembourg.....	12,978	11,637
Monaco.....	125,065	3,611
Netherlands.....	120,359	29,965
Norway.....	35,340	9,146
Poland.....	91,699	18,567
Portugal, incl. the Azores and Madeira Islands.....	24	17
Romania.....	194,396	30,559
San Marino.....	173,649	7,520
Spain, incl. Balearic and Canary Islands.....	15,941	5,496
Sweden.....	98,766	18,607
Switzerland.....		
Yugoslavia.....		
TERRITORIES AND DEPENDENCIES		
Britain—	75	109
*Channel Islands.....	2	27
*Gibraltar.....	227	48
*Isle of Man.....	122	329
*Malta and Gozo.....		
Denmark—	540	35
Faeroe Islands.....		
Norway—	24,101	12,10
Svalbard and Jan Mayen Islands.....		
Oceania		
INDEPENDENT STATES		
*Australia, excl. aborigines.....	2,974,583	10,508
*New Zealand.....	103,736	2,420
*Western Samoa.....	1,130	110
TERRITORIES AND DEPENDENCIES		
Australia—	60	3
*Christmas Island.....	5	1
*Cocos (Keeling) Islands.....	14	1
*Norfolk Island.....	90,540	523
*Papua.....		

For footnotes, see end of table.

38.—Areas and Populations of the Countries or Areas of the World, 1961—concluded

Continent and Country	Area	Population
	sq. miles	'000
Oceania—concluded		
TERRITORIES AND DEPENDENCIES—concluded		
Britain—		
*British Solomon Islands.....	11,500	127
*Fiji Islands.....	7,055	407
*Gilbert and Ellice Islands.....	349	47
*Pitcairn.....	2	1
*Tonga.....	269	65
France—		
French Polynesia.....	1,544	76
New Caledonia and dependencies.....	7,336	78
New Zealand—		
*Cook Islands.....	90	18
*Niue.....	100	5
*Tokelau Islands.....	4	2
United States—		
American Samoa.....	76	20
Guam.....	212	68
TRUST TERRITORIES		
*Nauru (Aust., N.Z., and Br. Adm.).....	8	5
*New Guinea (Aust. Adm.).....	93,000	1,449
Pacific Islands (U.S. Adm.).....	687	79
CONDOMINIUMS		
*Canton and Enderbury (Anglo-American).....	27	1
*New Hebrides (Anglo-French).....	5,700	61
Union of Soviet Socialist Republics		
Union of Soviet Socialist Republics.....	8,649,512	218,000

¹ Formerly part of Ruanda-Urundi, a UN trust territory under Belgian administration declared independent July 1, 1962. ² Latest official estimate. ³ Fewer than 500 persons. ⁴ Including armed forces overseas. ⁵ Excluding Indian jungle population. ⁶ Excluding Indian and Negro population living in tribes. ⁷ Excluding armed forces and foreigners. ⁸ Including the population of Kashmir-Jammu, the final status of which has not yet been determined. ⁹ Less than one square mile. ¹⁰ Inhabited only in winter season; included also in the population of Norway.

CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found facing p. 1 of this volume.*

PART I.—IMMIGRATION AND EMIGRATION*

The history of immigration and the Immigration Act and Regulations is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. 176-178 of the 1959 edition.

Section 1.—Immigration Policy and Administration

Since the end of the Second World War it has been the policy of the Government of Canada to stimulate the growth of the population by selective immigration. Efforts are made to choose immigrants of prospective adaptability to the Canadian way of life and to admit them at such times and in such numbers as employment conditions warrant.

Federal immigration policy is governed by the provisions of the Immigration Act and Regulations. With effect from Feb. 1, 1962, the Regulations, which include the provision for permanent admission to Canada, were revised to place primary stress on education, training and skills as the main conditions of admissibility, regardless of the nationality or country of origin of the applicant. Persons qualifying on these grounds who have sufficient means to establish themselves in Canada or are coming forward to approved employment, or with suitable plans for self-establishment in Canada, are admissible. This means that any suitably qualified person from any part of the world can be considered for admission to Canada entirely on his own merit, without regard to his race, colour, national origin or the country from which he comes. Similarly, if a person has the requisite skills and potential ability to establish himself in Canada, he or she may also be sponsored by a parent, parent-in-law or fiancé(e) already in Canada, provided the sponsor is a Canadian citizen. The Canadian sponsor must be able to provide care and maintenance for such immigrant until the latter is able to look after himself. The sponsorship at the Canadian end takes the place of the requirement that the immigrant himself must have sufficient means or, alternatively, firm employment or self-employment opportunities. All immigrants must be in good health and of good character and be in possession of such documentation as the Regulations prescribe.

* Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

Other classes of admissible immigrants consist of persons in the close-relative and immediate-dependant category who may be sponsored by Canadian citizens or by persons other than Canadian citizens who have been legally admitted to Canada for permanent residence and wish to bring forward a mother, father, husband, wife, intended wife, grandparent or an unmarried minor child and who are able to receive and care for them. This provision is of universal application; its principal effect is to improve the position of persons from countries which have received less favoured treatment in the past, by including grandparents and fiancées in the admissible categories of dependants and eliminating age limits with respect to fathers and mothers. The special provisions under the former Regulations regarding the admissibility of other classes of relatives, such as brothers and sisters, adult sons and daughters, orphan nieces, etc., which applied to certain countries, remain unchanged. The new Regulations make no reference to special agreements in effect with India, Pakistan and Ceylon. The enlarged provisions of the new Regulations bring directly into the admissible classes those qualified but unsponsored immigrants from these three countries who formerly were covered by the agreements and make it unnecessary to have a special regulation to provide for them.

The Immigration Branch of the Department of Citizenship and Immigration administers the Immigration Act and Regulations. Twenty-eight visa offices are located abroad at London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Rome, Athens, Cairo, Tel Aviv, New Delhi and Hong Kong. Four offices in the United States—at New York, Chicago, San Francisco and Denver—furnish information and counselling but do not issue visas. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding prospects for successful settlement. Examination of immigrants and visitors is carried out at 348 ports of entry on the Canadian coasts, at points along the International Boundary, and at certain airports.

A primary objective of the immigration program is satisfactory settlement. The Federal Government assists immigrants in establishing themselves in the Canadian community through the work of the specialized settlement officers of the Immigration Branch, the Canadian Citizenship and Canadian Citizenship Registration Branches and other government agencies, and co-operates closely with several voluntary agencies having the same objective.

Section 2.—Immigration Statistics

Postwar Immigration.—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes from six to eighteen months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

Since the end of World War II there have been wide annual fluctuations in immigration to Canada caused mainly by economic and political factors. Many of the persons who arrived in 1946 and 1947 were the wives and children of Canadian service men and their numbers were dictated by the availability of shipping. In 1948, as more shipping became available, the number of immigrants doubled. In addition to the large movement

from the British Isles, thousands of displaced persons were admitted and Germans and Italians began to come forward in appreciable numbers after having been removed from the enemy alien category. As the high level of immediate postwar economic activity levelled off, there was a drop of 30,000 in the number of immigrants entering in 1949 compared with 1948, and a further drop of 21,000 in 1950. Then the outbreak of war in Korea created a new stimulus to industry and caused shortages of labour; at the same time fear of war in Europe made Canada seem a desirable haven. Thus in 1951 immigration increased nearly threefold and remained in excess of 150,000 for the following three years. Very significant numbers of Germans and Italians were admitted and the gap between them and the British Isles group was narrowed. Another minor economic setback in 1954 caused immigration to fall in 1955 by some 45,000 but, with the return of better times in North America and the deterioration of the political situation in Europe, immigration again rose by 55,000 in 1956. The Hungarian revolution and the Suez crisis of 1956 had a sharp impact on Canadian immigration in 1957 when 282,164 persons were admitted, including 31,643 from Hungary and 108,989 from the British Isles. This was the largest number of immigrants to enter Canada since 1913.

The conclusion of the Suez affair and the suppression of the Hungarian revolt restored some measure of calm in Europe. Canada's economy suffered a recession in 1956 and 1957 while Europe's economic position improved, as a result of which only 124,851 immigrants came to Canada in 1958. Britain's recovery from the war and its aftermath was reflected in the fact that for the first time in the postwar years the British Isles group of arrivals was not the largest—persons from Italy were in first place, numbering 27,043 compared with 24,777 from the British Isles. Total arrivals dropped from 106,928 in 1959 to 104,111 in 1960 and to 71,689 in 1961 and during these years the numbers from Italy remained in first place. In 1962 the total number of immigrants increased slightly to 74,586 and immigrants from the British Isles again headed all groups. The main contributing factors to the decline in number of immigrant arrivals after 1958 were: (1) the upsurge in the economies of those European countries from which Canada has received the majority of its immigrants and (2) the increasing emphasis placed on selecting the immigrant who has sufficient funds and the necessary knowledge to establish himself in a business or industry of his own, as well as on the immigrant with special skills or qualifications which would permit his ready integration into the Canadian labour force.

Immigrants coming from the British Isles during the period 1946 to 1962, inclusive, numbered 608,117 and represented 28.3 p.c. of the total immigration to Canada in that period. Other large groups came from: Italy, 287,612 representing 13.4 p.c. of the total; Germany, 246,553 representing 11.4 p.c.; the Netherlands, 150,742 representing 7 p.c.; the United States, 168,284 representing 7.8 p.c.; and Poland, 93,827 representing 4.4 p.c.

Thus, in each postwar year up to and including 1957 and in the year 1962, the British Isles group was the largest, ranging from a low of 12,695 in 1950 to a high of 108,989 in 1957 and from 1958 to 1961 immigrants from Italy headed all groups. Immigrants from the United States formed the second largest group in 1946 and 1947, from Poland in 1948, 1949 and 1950, from Germany from 1951 to 1954, from Italy in 1955, 1956 and 1962, from Hungary in 1957, and from the British Isles from 1958 to 1961. During the whole postwar period, immigration from the United States remained relatively constant, ranging from a low of 7,393 in 1948 to a high of 11,643 in 1962; the annual average for the period was 9,899.

Total immigration to Canada for the years 1946-62, inclusive, was 2,151,505. The yearly totals for this period are shown in Table 1, together with annual figures back to 1913, the peak year of immigration into Canada.

1.—Immigrant Arrivals, 1913-62

NOTE.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913.....	400,870	1923.....	133,729	1933.....	14,382	1943.....	8,504	1953.....	168,868
1914.....	150,484	1924.....	124,164	1934.....	12,476	1944.....	12,801	1954.....	154,227
1915.....	36,665	1925.....	84,907	1935.....	11,277	1945.....	22,722	1955.....	109,946
1916.....	55,914	1926.....	135,982	1936.....	11,643	1946.....	71,719	1956.....	164,857
1917.....	72,910	1927.....	153,886	1937.....	15,101	1947.....	64,127	1957.....	282,164
1918.....	41,845	1928.....	166,783	1938.....	17,244	1948.....	125,414	1958.....	124,851
1919.....	107,698	1929.....	164,993	1939.....	16,994	1949.....	95,217	1959.....	106,928
1920.....	138,824	1930.....	104,806	1940.....	11,324	1950.....	73,912	1960.....	104,111
1921.....	91,728	1931.....	27,530	1941.....	9,329	1951.....	194,391	1961.....	71,689
1922.....	64,224	1932.....	20,591	1942.....	7,576	1952.....	164,498	1962.....	74,586

Immigrant Population.—The 1961 Census provided information on the number and distribution of immigrants in the population of Canada on the census date, June 1, 1961, by period of arrival; this is summarized by province in Table 2.

2.—Immigrant Population, by Period of Immigration and by Province, Census 1961

Province or Territory	Before 1930	1931-40	1941-45	1946-50	1951-55	1956-61 ¹	1946-61 ¹	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	1,356	339	338	1,317	1,230	1,689	4,236	6,269
Prince Edward Island.....	1,170	217	117	439	452	597	1,488	2,992
Nova Scotia.....	14,752	2,165	1,079	4,434	5,281	6,457	16,172	34,168
New Brunswick.....	10,496	1,451	886	3,184	2,887	4,379	10,450	23,283
Quebec.....	121,164	14,202	5,321	38,452	87,873	121,437	247,762	388,449
Ontario.....	462,705	41,959	15,190	169,044	323,528	340,731	833,303	1,353,157
Manitoba.....	101,758	4,259	1,483	15,925	21,134	25,439	62,498	169,998
Saskatchewan.....	116,192	3,170	1,034	8,124	9,497	11,372	28,993	149,389
Alberta.....	156,324	8,446	2,420	25,326	48,263	47,970	121,559	288,749
British Columbia.....	229,790	11,300	4,498	37,296	65,947	74,301	177,544	423,132
Yukon Territory.....	867	81	42	265	626	833	1,724	2,714
Northwest Territories.....	425	114	37	178	472	737	1,387	1,963
Canada.....	1,216,999	87,703	32,445	303,984	567,190	635,942	1,507,116	2,844,263

¹ Up to the date of the Census, June 1, 1961.

The above table shows that 1,507,116 immigrants reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These postwar immigrants constituted about 75 p.c. of the total immigrant arrivals in Canada during the same period. According to the records of the Department of Citizenship and Immigration, 2,033,598 persons entered Canada as immigrants during this period. The difference between this total and the number of postwar immigrants reported in the 1961 Census, amounting to 526,482 persons, represents the losses due to death and emigration among the postwar immigrant arrivals up to June 1961. Since this difference is arrived at by comparing statistics derived from two different sources, it must be taken as only an approximate measure of these losses. It is estimated that deaths of immigrants arriving since 1946 would not exceed 86,000 by June 1961. Hence it would appear that roughly 440,000 emigrated in the period between January 1946 and June 1961, or slightly more than one fifth of the total arrivals over this period.

The 440,000 postwar immigrants who appear to have emigrated from Canada up to June 1961 would thus constitute a little over half the total estimated emigration from Canada since 1946, according to data on emigration used in the preparation of annual population estimates. In this connection it might be mentioned that a substantial element in total Canadian emigration is the movement of Canadian-born persons to the United States, some 387,000 entering the United States as immigrants between July 1946 and July 1961 according to the United States Immigration Service records (see pp. 209-210).

Analyses of Recent Immigration.—Analyses of the content of the immigration movement during the years 1960, 1961 and 1962 are given in Tables 3 to 10, and the numbers of persons deported from Canada for various reasons for the years 1953-62 in Table 11.

Table 3 classifies immigrant admissions by country of last permanent residence for 1960-62. During the three-year period, 19.5 p.c. of the immigration flow came from Britain and the Republic of Ireland, 55.3 p.c. from Continental Europe, 13.7 p.c. from the United States and 11.5 p.c. from all other countries.

3.—Immigrant Arrivals by Country of Last Permanent Residence, 1960-62

NOTE.—Comparable figures from 1946 are given in the corresponding table of previous Year Books beginning with the 1951 edition; figures in less detail for 1939-45 appear in the 1950 edition, p. 186.

Country	1960	1961	1962	Country	1960	1961	1962
No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth—				Europe—concluded			
British Isles—				France.....	2,944	2,330	2,674
England.....	13,570	8,499	10,950	Germany.....	10,774	6,231	5,548
Northern Ireland.....	1,035	688	951	Greece.....	4,856	3,766	3,741
Scotland.....	4,561	2,578	3,505	Hungary.....	507	287	450
Wales.....	373	91	187	Italy.....	20,681	14,161	13,641
Lesser Isles.....	46	14	10	Netherlands.....	5,429	1,787	1,555
Totals, British Isles....	19,585	11,870	15,603	Poland.....	2,668	2,391	1,601
Australia.....	1,273	1,142	1,063	Portugal.....	5,023	2,762	2,928
Hong Kong.....	1,146	710	426	Scandinavian Countries—			
India.....	505	568	529	Denmark.....	1,115	475	594
Malta.....	468	187	362	Other.....	711	329	412
New Zealand.....	384	290	321	Spain.....	526	476	362
Union of South Africa.....	503	1	1	Switzerland.....	1,048	805	802
West Indies.....	1,168	1,126	1,480	Yugoslavia.....	881	852	862
Other Commonwealth.....	502	578	894	Other.....	404	330	251
Totals, Commonwealth.	25,534	16,471	20,678	North America—²			
Republic of Ireland.....	799	415	452	Mexico.....	115	109	134
Africa².....	154	838 ³	645 ⁴	United States.....	11,247	11,516	11,643
Asia².....	395	270	642	Other.....	158	154	132
Europe—²				South America².....	1,666	1,138	636
Austria.....	2,038	1,131	778	Middle East—²			
Belgium.....	1,282	1,013	706	Egypt.....	58	31	1,322
Finland.....	964	339	317	Israel.....	1,532	652	558
				Lebanon.....	283	293	303
				Other.....	242	224	182
				Other Countries.....	77	113	37
				Totals, All Countries....	104,111	71,689	74,586

¹ Included in Africa.
South Africa.

² Excludes Commonwealth countries.
⁴ Includes 340 from the Republic of South Africa.

³ Includes 531 from Republic of

Of the immigrant arrivals in 1962, 28.9 p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 23.8 p.c. in 1961 and 24.6 p.c. in 1960, 23.9 p.c. were born in Italy or Greece, 12.1 p.c. in the United States, 11.0 p.c. in Germany, France or the Netherlands, 5.5 p.c. in Poland or Yugoslavia, and 4.8 p.c. in Spain or Portugal.

4.—Birthplaces of Immigrant Arrivals, 1960-62

NOTE.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1960	1961	1962	Birthplace	1960	1961	1962
No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth—				Europe—concluded			
British Isles—				Finland.....	1,007	355	354
England.....	11,635	7,471	9,462	France.....	2,186	1,789	1,929
Northern Ireland.....	1,143	806	1,031	Germany.....	9,920	5,686	4,744
Scotland.....	4,756	2,845	3,787	Greece.....	4,893	3,771	3,888
Wales.....	496	273	399	Hungary.....	1,470	823	817
Lesser Isles.....	30	21	35	Italy.....	20,758	14,373	13,904
Totals, British Isles....	18,060	11,416	14,714	Netherlands.....	5,268	1,839	1,559
Australia.....	1,227	1,042	993	Norway.....	353	184	209
Canada.....	754	788	899	Poland.....	3,552	2,774	2,028
India.....	750	767	762	Portugal.....	5,099	2,846	3,048
Malta.....	500	202	387	Romania.....	632	526	495
New Zealand.....	417	314	335	Spain.....	609	564	508
Union of South Africa.....	718	1	1	Switzerland.....	850	646	615
West Indies.....	1,199	1,215	1,719	Union of Soviet Socialist Republics ¹	978	570	494
Other Commonwealth.....	756	652	1,058	Yugoslavia.....	3,880	2,378	2,072
Republic of Ireland.....	1,235	656	703	Other.....	684	458	377
Africa².....	333	990	1,052	Middle East—²			
Asia—²				Egypt.....	202	138	1,325
China.....	1,229	760	594	Israel.....	420	201	218
Japan.....	169	125	157	Lebanon.....	272	252	227
Other.....	99	176	391	Turkey.....	291	298	335
Europe—²				Other.....	44	58	83
Austria.....	1,077	648	485	North America—²			
Belgium.....	899	768	582	Mexico.....	105	97	123
Czechoslovakia.....	355	302	250	United States.....	8,740	9,015	9,000
Denmark.....	1,130	488	615	Other.....	174	183	160
				South America².....	578	450	291
				Grand Totals.....	104,111⁴	71,689³	74,586⁵

¹ Included in Africa.

² Excludes Commonwealth countries.

³ In both Europe and Asia.

⁴ Includes 4 born at sea and 235 from other countries.

⁵ Includes 2 born at sea and 104 from other countries.

⁶ Includes 87 from other countries.

Immigrants of Continental European origin comprised 62.7 p.c. of the influx during 1962 and those of British origin made up 29.9 p.c. Proportions of Continental Europeans in 1961 and 1960 were 68.2 p.c. and 70.5 p.c., respectively, and of British origin 26.4 p.c. and 25.4 p.c. in the same years.

5.—Origins of Immigrant Arrivals, 1960-62

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Origin	1960	1961	1962	Origin	1960	1961	1962
No.	No.	No.	No.	No.	No.	No.	No.
British—				Continental European—			
English.....	15,601	11,218	13,038	Albanian.....	33	45	28
Irish.....	4,012	3,132	3,492	Austrian.....	1,001	641	506
Scottish.....	6,130	4,167	5,118	Belgian.....	776	733	546
Welsh.....	692	456	621	Bulgarian.....	47	30	18
Totals, British.....	26,435	18,963	22,269	Czech and Slovak.....	220	169	151
				Estonian.....	143	63	54
				Finnish.....	1,047	381	385

5.—Origins of Immigrant Arrivals, 1960-62—concluded

Origin	1960	1961	1962	Origin	1960	1961	1962
No.	No.	No.	No.	No.	No.	No.	No.
Continental European— continued				Continental European— concluded			
French.....	2,940	2,479	2,974	Yugoslavia ¹	3,572	2,323	2,044
German.....	12,430	8,023	7,000				
Greek.....	5,093	3,941	4,239	Totals, Continental			
Hungarian.....	1,279	783	837	European.....	73,351	48,868	46,783
Italian.....	21,690	15,088	14,538				
Jewish.....	2,964	2,043	1,840	Other—			
Latvian.....	161	122	66	Arabian.....	84	65	67
Lithuanian.....	104	114	61	Armenian.....	164	186	777
Luxemburger.....	13	10	16	Chinese.....	1,402	894	876
Maltese.....	485	208	372	East Indian.....	691	772	850
Netherlander.....	5,983	2,293	1,982	Indian (American).....	25	40	42
Polish.....	3,401	2,985	2,143	Japanese.....	169	126	154
Portuguese.....	5,277	2,999	3,443	Lebanese.....	242	215	444
Romanian.....	189	156	155	Mexican.....	45	29	24
Russian.....	232	209	198	Negro.....	1,135	1,131	1,559
Scandinavian—				Syrian.....	28	47	122
Danish.....	1,207	598	742	Turkish.....	133	139	174
Icelandic.....	14	7	4	Unspecified.....	207	214	445
Norwegian.....	551	419	408				
Swedish.....	489	344	367	Totals, Other.....	4,325	3,858	5,534
Spanish ¹	850	844	822				
Swiss ²	811	653	674	Grand Totals.....	104,111	71,689	74,586
Ukrainian.....	349	165	170				

¹ Includes a few minor groups.
such as German, French, Italian, etc.

² Reported as Swiss origin but evidently one of the constituent races

Out of every 100 immigrants admitted to Canada during the three-year period 1960-62, 21 were British subjects, 20 were citizens of Italy, 12 of the United States, 9 of Germany, 5 of Greece and 4 each of Portugal and the Netherlands; other nationalities made up the remaining 25.

6.—Citizenship of Immigrant Arrivals, 1960-62

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Country of Citizenship	1960	1961	1962	Country of Citizenship	1960	1961	1962
No.	No.	No.	No.	No.	No.	No.	No.
Australia.....	1,403	1,198	1,171	Netherlands.....	5,480	1,897	1,631
Austria.....	1,102	650	457	New Zealand.....	412	312	308
Belgium.....	792	727	521	Norway.....	349	180	206
Britain and colonies.....	21,226	13,932	18,475	Pakistan.....	98	77	74
Central America.....	14	18	10	Poland.....	2,704	2,411	1,639
Ceylon.....	21	32	20	Portugal.....	5,108	2,861	3,063
China.....	1,158	706	545	South Africa.....	640	470	368
Czechoslovakia.....	42	29	10	South America.....	475	431	314
Denmark.....	1,133	483	608	Southern Rhodesia.....	56	61	76
Egypt.....	33	34	964	Spain.....	603	555	499
Finland.....	989	348	343	Sweden.....	254	123	155
France.....	2,395	1,987	2,350	Switzerland.....	836	630	604
Germany.....	10,596	6,060	5,081	Turkey.....	218	204	177
Greece.....	4,922	3,794	4,023	Union of Soviet Socialist			
Hungary.....	534	270	437	Republics.....	182	105	81
India.....	534	589	575	United States.....	10,060	10,395	10,452
Ireland, Republic of.....	1,056	549	598	Yugoslavia.....	873	1,001	1,009
Israel.....	1,581	674	587	Other African.....	5	11	16
Italy.....	21,040	14,352	13,951	Other Asian.....	50	63	154
Japan.....	159	114	141	Other European.....	179	180	143
Lebanon.....	305	283	292	Stateless.....	4,230	2,404	1,922
Luxembourg.....	14	10	13	Others.....	101	219	312
Mexico.....	101	82	102				
Morocco.....	48	178	109	Totals.....	104,111	71,689	74,586

Sex distribution of recent immigrant arrivals is shown in Table 7. In the three years 1960-62, adult males comprised 34.1 p.c. of the immigrants, adult females 40.5 p.c. and children under 18 years of age the remaining 25.4 p.c. Without relation to age, 53.0 p.c. of the newcomers were females.

7.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1960-62

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Item	1960	1961	1962
	No.	No.	No.
Males.....	51,018	32,106	34,546
Under 18 years.....	13,365	9,328	9,740
Adult.....	37,653	22,778	24,806
Females.....	53,093	39,583	40,040
Under 18 years.....	12,852	8,935	8,427
Adult.....	40,241	30,648	30,613
Totals, Immigrants.....	104,111	71,689	74,586

The number of female immigrants coming into Canada has been higher than the number of male immigrants in every year since 1957. In 1962 the excess of females was 5,494 and only in the age group 0-14 years did the number of males exceed that of females. In the single category, males exceeded females in all age groups up to 30 years but in the married category females exceeded males by 3,509, in the widowed category by 1,995 and in the divorced or separated category by 454. Of all persons arriving in 1962 who were 15 years of age or over, 51.9 p.c. were married, 41.2 p.c. were single and 6.3 p.c. were widowed or divorced.

8.—Marital Status of Immigrant Arrivals, by Sex and Age Group, 1962

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
Males—						
0-14 years.....	8,449	—	—	—	—	8,449
15-19 ".....	2,868	31	—	—	—	2,899
20-24 ".....	4,604	1,202	1	10	4	5,821
25-29 ".....	2,860	3,039	4	29	12	5,944
30-39 ".....	1,333	4,963	19	117	34	6,466
40-49 ".....	200	2,058	21	60	24	2,363
50-59 ".....	71	1,115	41	39	7	1,273
60 years or over.....	59	935	297	29	11	1,331
Totals, Males.....	20,444	13,343	383	284	92	34,546
Females—						
0-14 years.....	8,043	—	—	—	—	8,043
15-19 ".....	2,612	877	—	—	1	3,490
20-24 ".....	4,438	3,932	2	12	12	8,396
25-29 ".....	2,590	3,552	21	62	20	6,245
30-39 ".....	1,604	4,628	78	176	57	6,543
40-49 ".....	346	1,957	226	156	47	2,732
50-59 ".....	154	1,151	624	122	52	2,103
60 years or over.....	193	755	1,427	70	43	2,488
Totals, Females.....	19,980	16,852	2,378	598	232	40,040

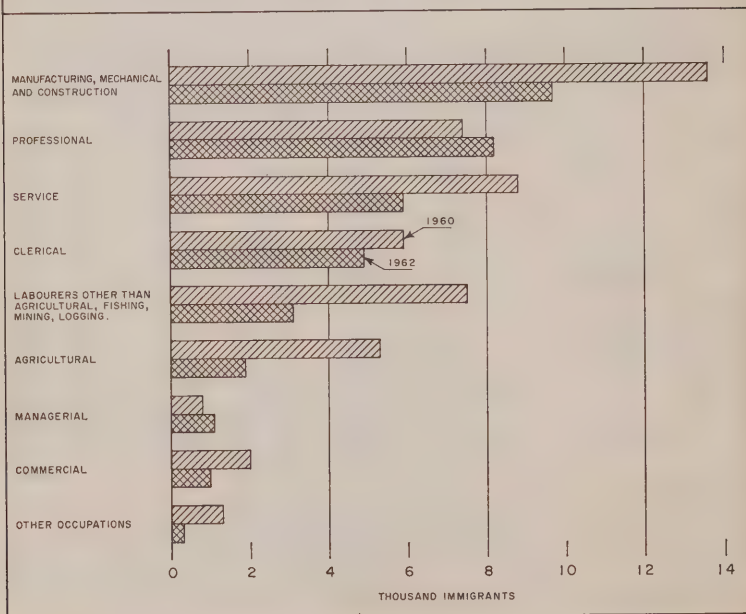
Destinations and Occupations.—Upon arrival in Canada, immigrants are asked to state their intended destination. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1960-62—50.4 p.c. of all the males and 52.0 p.c. of all the females. Quebec was the second most important province of destination, receiving 24.3 p.c. of the males and 23.6 p.c. of the females, followed by British Columbia with 9.7 p.c. of the males and 10.2 p.c. of the females. The proportions

intending to settle in the Prairie Provinces were 12.7 p.c. and 11.6 p.c., respectively, and in the Atlantic Provinces 2.8 p.c. and 2.6 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

9.—Intended Destinations of Male and Female Immigrants Admitted to Canada, 1960-62

Province or Territory	1960			1961			1962		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	137	169	306	184	181	365	196	182	378
Prince Edward Island....	38	45	83	37	32	69	33	44	77
Nova Scotia.....	598	612	1,210	428	473	901	442	547	989
New Brunswick.....	317	317	634	415	355	770	491	453	944
Quebec.....	11,794	11,980	23,774	7,675	9,245	16,920	9,097	10,035	19,132
Ontario.....	26,396	28,095	54,491	16,008	20,510	36,518	16,852	20,358	37,210
Manitoba.....	2,338	1,999	4,337	1,216	1,311	2,527	1,197	1,213	2,410
Saskatchewan.....	1,127	960	2,087	596	737	1,333	552	611	1,163
Alberta.....	3,454	3,495	6,949	2,260	2,563	4,823	2,239	2,506	4,745
British Columbia.....	4,765	5,355	10,120	3,226	4,100	7,326	3,398	4,043	7,441
Yukon and Northwest Territories.....	54	66	120	61	76	137	49	48	97
Canada.....	51,018	53,093	104,111	32,106	39,583	71,689	34,546	40,040	74,586

INTENDED OCCUPATIONS OF IMMIGRANTS ADMITTED TO CANADA, 1960 AND 1962



In like manner, immigrant arrivals are asked to record the occupations which they intend to follow in Canada. Approximately 49.3 p.c. of the persons admitted in 1962 declared that they would enter the labour force. The other 50.7 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 25.4 p.c. were classed as professional and managerial, 7.9 p.c. were in agricultural occupations, 6.1 p.c. in service occupations, 35.9 p.c. in manufacturing, mechanical and construction trades, and 12.6 p.c. were general labourers. About 34 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 10.

10.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1961 and 1962

Intended Occupation	1961			1962		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Managerial (owners, managers, officials).....	859	37	896	1,048	45	1,093
Professional.....	3,922	2,774	6,696	4,972	3,246	8,218
Accountants and auditors.....	197	18	215	264	6	270
Architects.....	29	2	31	62	3	65
Chemists (other than pharmacists).....	112	10	122	216	18	234
Dentists.....	30	6	36	52	9	61
Draughtsmen and designers.....	336	34	370	476	30	506
Aeronautical engineers.....	17	—	17	—	—	—
Chemical engineers.....	44	—	44	62	—	62
Civil engineers (and other professional engineers, <i>n.e.s.</i>).....	177	—	177	415	4	419
Forestry engineers.....	1	—	1	—	—	—
Electrical engineers.....	141	—	141	197	—	197
Mechanical engineers.....	125	—	125	244	—	244
Metallurgical engineers.....	5	—	5	—	—	—
Mining engineers.....	37	—	37	45	—	45
Laboratory technicians and assistants, <i>n.e.s.</i>	189	152	341	291	163	454
Graduate nurses.....	—	1,108	1,108	28	1,593	1,621
Physicians and surgeons.....	353	92	445	456	74	530
Teachers and professors.....	832	648	1,480	864	664	1,528
Other professional workers.....	1,297	704	2,001	1,300	682	1,982
Clerical.....	1,059	3,173	4,232	1,368	3,530	4,898
Stenographers and typists.....	24	2,122	2,146	34	2,281	2,315
Other clerical workers.....	1,035	1,051	2,086	1,334	1,249	2,583
Transportation.....	412	1	413	366	3	369
Air pilots, captains and mates, railway conductors, locomotive engineers, etc.....	71	—	71	37	1	38
Other transportation workers.....	341	1	342	329	2	331
Communication.....	87	74	161	47	73	120
Commercial.....	772	392	1,164	743	307	1,050
Commercial travellers and salesmen.....	580	21	601	258	7	265
Sales clerks.....	67	340	407	168	280	448
Other trading workers.....	125	31	156	317	20	337
Financial.....	72	5	77	154	10	164
Service.....	1,234	5,323	6,557	1,441	4,412	5,853
Barbers, hairdressers and manicurists.....	376	255	631	399	298	697
Nurses' aides.....	78	495	573	48	244	292
Cooks.....	229	57	286	323	74	397
Domestic servants.....	33	4,285	4,318	44	3,111	3,155
Other non-professional service workers.....	518	231	749	627	685	1,312
Agricultural.....	2,299	42	2,341	1,887	36	1,923
Farmers and agriculturists.....	148	—	148	279	—	279
Farm labourers.....	2,151	42	2,193	1,608	36	1,644
Fishing, Trapping and Logging.....	65	—	65	78	—	78
Fishermen.....	13	—	13	12	—	12
Trappers.....	1	—	1	2	—	2
Bushmen and lumbermen.....	51	—	51	64	—	64
Mining.....	90	—	90	100	—	100
Miners.....	69	—	69	65	—	65
Oil field workers.....	9	—	9	9	—	9
Other workers in mines and quarries.....	12	—	12	26	—	26

**10.—Intended Occupations of Male and Female Immigrants Admitted to Canada,
1961 and 1962—concluded**

Intended Occupation	1961			1962		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Manufacturing, Mechanical and Construction	7,082	994	8,076	8,526	1,159	9,685
Aircraft mechanics and repairmen.....	32	—	32	45	—	45
Automobile mechanics and repairmen.....	573	—	573	751	1	752
Bakers.....	242	7	249	261	11	272
Blacksmiths, hammermen and forgemen.....	57	—	57	60	—	60
Boilermakers and platers.....	61	—	61	115	1	116
Brick and stone masons.....	583	—	583	618	—	618
Butchers and meat cutters.....	203	3	206	181	2	183
Butter and cheese makers.....	3	—	3	11	—	11
Cabinet and furniture makers.....	216	—	216	299	—	299
Carpenters.....	634	—	634	714	—	714
Compositors and typesetters.....	77	—	77	64	—	64
Construction machinery operators.....	40	—	40	51	—	51
Dressmakers and seamstresses.....	5	662	667	5	795	800
Electricians and wiremen.....	426	—	426	502	—	502
Electroplaters.....	21	—	21	18	—	18
Furriers.....	39	8	47	64	5	59
Glove makers.....	1	—	1	—	—	—
Jewellers and watchmakers.....	53	3	56	101	6	107
Leather cutters.....	3	—	3	5	—	5
Machine operators.....	237	17	254	33	—	33
Machinists.....	250	19	269	268	15	283
Mechanics and repairmen.....	512	—	512	488	1	489
Metal fitters and assemblers.....	209	4	213	459	7	466
Milliners.....	2	5	7	—	4	5
Millwrights.....	6	—	6	17	—	17
Moulders.....	48	—	48	33	—	33
Painters, decorators and glaziers.....	388	—	388	420	3	423
Patternmakers.....	16	—	16	19	—	19
Photoengravers and lithographers.....	9	—	9	28	1	29
Plasterers and lathers.....	51	—	51	107	—	107
Plumbers and pipe fitters.....	192	—	192	170	—	170
Printers and pressmen and plate printers.....	33	—	33	69	1	70
Radio repairmen.....	85	1	86	144	3	147
Sawyers (wood).....	13	—	13	7	—	7
Sheet metal workers and tinsmiths.....	47	—	47	118	—	118
Shoemakers and shoe repairers.....	173	—	173	215	1	216
Spinners and weavers.....	20	14	34	14	16	30
Stationary engineers.....	29	—	29	14	—	14
Stonecutters and dressers.....	3	—	3	13	—	13
Tailors.....	307	21	328	361	24	385
Tanners.....	8	—	8	11	—	11
Toolmakers, diemakers and setters.....	115	—	115	188	—	188
Upholsterers.....	58	1	59	58	2	60
Welders and flame cutters.....	242	2	244	399	2	401
Other workers in food products.....	44	1	45	52	6	58
Other workers in rubber products.....	13	—	13	15	—	15
Other workers in leather and leather products.....	16	4	20	18	—	18
Other workers in textiles.....	40	11	51	43	25	68
Other workers in clothing and textile goods.....	38	108	146	28	130	158
Other workers in wood products.....	39	—	39	65	2	67
Workers in pulp, paper and paper products.....	10	2	12	33	—	33
Other workers in printing and publishing.....	23	10	33	63	26	89
Other metal workers.....	118	5	121	18	—	18
Other workers in non-metallic mineral products.....	58	5	63	46	6	52
Other manufacturing and mechanical workers.....	292	81	373	535	63	598
Other construction workers.....	71	—	71	121	—	121
Labourers (other than agricultural, fishing, logging and mining).....	3,827	155	3,982	2,984	161	3,145
Not Stated.....	48	11	59	28	24	52
Totals, Workers.....	21,828	12,981	34,809	23,742	13,006	36,748
Dependants—						
Wives.....	—	15,882	15,882	—	15,674	15,674
Children.....	8,984	8,331	17,315	9,323	8,814	18,137
Others.....	1,294	2,389	3,683	1,481	2,546	4,027
Totals, Immigrants.....	32,106	39,583	71,689	34,546	40,040	74,586

Deportations.—Deportations by cause and nationality are shown in Table 11 for the years 1953-62. Persons who have not yet acquired domicile (five years of residence in Canada) may be deported if they fall into prohibited classes at time of entry or within five years of entry, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons or mental institutions, or have gained entry by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

11.—Deportations,¹ by Cause and Nationality, 1953-62

NOTE.—Figures from 1903 are given in the corresponding table of previous Year Books.

Cause and Nationality	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Cause	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Mental and physical.....	85	74	125	91	55	81	107	66	40	40
Public charges.....	14	2	23	21	13	7	10	15	18	8
Criminality.....	121	210	192	164	145	170	232	200	223	147
Misrepresentation ² and stealth.....	309	249	282	249	262	338	317	236	252	342
Other causes.....	66	118	81	79	34	68	85	54	59	93
Totals, Deportations..	595	653	703	604	509	664	751	571	592	630
Nationality										
British.....	237	249	227	212	155	155	204	125	127	90
United States.....	92	88	124	123	98	132	175	117	164	143
Other.....	266	316	352	269	256	377	372	329	301	397

¹ Excludes rejections and persons refused admission.

² Includes deserting seamen deported.

Returning Canadians.—The numbers of Canadians returning to Canada during each of the ten years 1953-62 after having established residence in the United States were:—

Year	No.	Year	No.
1953.....	4,606	1958.....	5,297
1954.....	4,516	1959.....	5,243
1955.....	3,942	1960.....	5,233
1956.....	4,740	1961.....	6,250
1957.....	5,426	1962.....	5,758

Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 12 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1953-62 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 44,272 persons entering the United States from Canada in the year ended June 30, 1962, 30,377 were native-born Canadians—14,632 males and 15,745 females. Slightly more than one quarter, or 7,982, of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 30,377 native-born persons was the professional or technical group which numbered 3,532; clerical or kindred workers numbered 3,062, and 1,639 were classed as craftsmen or foremen. On the other hand, 16,464 persons, or 54.2 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 41.2 p.c. of the total were children under 20 years of age.

12.—Persons Entering the United States from Canada, Years Ended June 30, 1953-62

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Canadian-Born	Total from Canada	Year	Canadian-Born	Total from Canada
	No.	No.		No.	No.
1953.....	28,967	36,283	1958.....	30,055	45,143
1954.....	27,055	34,873	1959.....	23,082	34,599
1955.....	23,091	32,435	1960.....	30,990	46,668
1956.....	29,533	42,363	1961.....	32,038	47,470
1957.....	33,203	46,354	1962.....	30,377	44,272

Of the 44,272 persons entering the United States from Canada claiming Canada as country of last permanent residence—which of course includes native-born persons and those born in other countries who have resided in Canada—the Immigration and Naturalization Service, United States Department of Justice, lists 5,561 as professional, technical and kindred workers, 4,394 as clerical and kindred workers and 3,833 as craftsmen, foremen and kindred workers. Housewives, children and others with no reported occupation accounted for 21,376, or 48.3 p.c. of the total.

PART II.—CANADIAN CITIZENSHIP*

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155.

Section 1.—The Canadian Citizenship Act

The Canadian Citizenship Act came into force on Jan. 1, 1947, its purpose being to give a clear definition of Canadian citizenship and provide an underlying community of status for all the people of Canada. Since Jan. 18, 1950, the administration of Canadian citizenship has been the responsibility of the Department of Citizenship and Immigration. The provisions of the Act and its several amendments are outlined in some detail in the 1955 Year Book, pp. 177-181. More briefly, they are given in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.—The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on

* Prepared in the Citizenship Registration Branch under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

Jan. 1, 1947; and (2) those born outside of Canada who were not aliens on Jan. 1, 1947 and who were entitled to claim derivative citizenship in accordance with the provisions of the Act.

The Act provides that a person in the second category who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.—A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada upon that date.

Canadian Citizens other than Natural-Born.—Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

Acquisition of Canadian Citizenship by Aliens and British Subjects.—The Act provides a means of acquiring Canadian citizenship. An alien who wishes to become a Canadian citizen must apply through his local court or through one of the special citizenship courts now being established. He must appear before the judge for a hearing and will in due course be granted citizenship if his application is approved by the judge and by the Minister. A British subject may apply for citizenship directly to the Minister. It should be added that a minor child does not automatically acquire Canadian citizenship upon the grant of citizenship to the responsible parent.

Status of Married Women.—The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. There is, however, one advantage granted to her—if she is married to a Canadian citizen she may apply for citizenship after a residence of only one year in Canada.

The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of Minor Children.—The minor child of a Canadian citizen other than a natural-born Canadian may receive a certificate of Canadian citizenship upon application therefor by his or her responsible parent, *de facto* guardian, or mother if she has custody of the child. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances. Provision is made for the granting

of a certificate to a person who has been adopted or legitimated in Canada and who has been admitted to Canada for permanent residence, if the adopter or the legally recognized father is a Canadian citizen.

Loss of Canadian Citizenship.—Canadian citizenship may be lost in the following manner:—

- (1) A Canadian citizen who when outside of Canada and not under disability acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.
- (2) A natural-born Canadian citizen who is a dual national by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen through the making of a declaration of renunciation thereof.
- (3) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.
- (4) An other-than-natural-born Canadian citizen, unless he served outside Canada in the Armed Forces of Canada in time of war or other related circumstances, or unless otherwise exempt, loses his citizenship automatically if he has resided outside of Canada for ten consecutive years. The period of absence may however be extended upon request, if the application is filed and granted before loss occurs and if good and sufficient reason exists.

Loss of Citizenship by Revocation—Applicable Only to Naturalized Persons.—In 1958 the Canadian Citizenship Act was amended and limited the provisions regarding loss of Canadian citizenship to the following: the citizenship of a Canadian citizen other than a natural-born Canadian citizen may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that such Canadian citizen, having been charged with the offence of treason under the Criminal Code or with an offence under the Official Secrets Act, has failed or refused to return to Canada voluntarily within such time as may be prescribed in a notice sent by the Minister to such person at his last known address and has not appeared at the preliminary inquiry into such offence or at the trial of such offence, or both as the case may be; or has obtained a certificate of naturalization or of Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Citizenship.—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the Commission referred to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shall be final.

Loss of Citizenship by Revocation—Applicable to Both Natural-Born and Naturalized Persons.—The Governor in Council may in his discretion order that any person shall cease to be a Canadian citizen if, upon a report from the Minister of Citizenship and Immigration, he is satisfied that such person has, when not under a disability (1) acquired voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage), (2) taken or made an oath, affirmation, or other declaration of allegiance to a foreign country, or (3) made a declaration renouncing his Canadian citizenship.

Section 2.—Canadian Citizenship Statistics

According to the 1961 Census, which required that each person state the country to which he owed allegiance and had citizenship rights as at June 1, 1961, less than 6 p.c. of Canada's population reported a country of citizenship other than Canada. Table 1 shows the citizenship of the population by province and Table 2 gives the numerical and percentage distribution of the population by country of citizenship for 1961 compared with the distribution in 1951.

1.—Citizenship of the Population, by Province, Census 1961

Province or Territory	Canadian	Other Common- wealth	United States	European Countries	Asiatic	Other	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	455,282	1,188	499	763	95	28	457,853
Prince Edward Island.....	103,618	337	283	364	16	11	104,629
Nova Scotia.....	725,686	4,568	2,254	4,122	237	140	737,007
New Brunswick.....	590,662	2,003	2,573	2,443	112	143	597,936
Quebec.....	5,078,082	31,491	16,585	121,278	4,608	7,167	5,259,211
Ontario.....	5,673,098	184,429	36,329	317,216	7,309	17,711	6,236,092
Manitoba.....	879,187	10,059	3,242	26,347	688	2,163	921,686
Saskatchewan.....	902,106	5,946	3,656	11,664	969	840	925,181
Alberta.....	1,240,895	21,353	11,674	53,129	1,982	2,911	1,331,944
British Columbia.....	1,498,498	44,647	10,908	64,641	6,973	3,415	1,629,082
Yukon and Northwest Territories.....	35,315	671	309	1,228	44	59	37,626
Canada.....	17,182,429	306,690	88,312	603,195	23,033	34,588	18,238,247

2.—Population by Country of Citizenship, with Percentage Distribution,
Censuses 1951 and 1961

Country of Citizenship	1951		1961	
	No.	P.C. of Total	No.	P.C. of Total
Canada.....	13,567,939	96.85	17,182,429	94.21
Other Commonwealth.....	104,071	0.74	306,690	1.68
United States.....	69,000	0.49	88,312	0.48
European Countries.....	236,490	1.69	603,195	3.31
Austria.....	3,769	0.03	12,648	0.07
Belgium.....	4,893	0.03	10,095	0.06
Czechoslovakia.....	9,990	0.07	2,491	0.01
Denmark.....	4,432	0.03	14,921	0.08
Finland.....	6,080	0.04	11,660	0.06
France.....	5,031	0.04	21,032	0.12
Germany.....	12,926	0.09	126,241	0.69
Hungary.....	7,871	0.06	26,775	0.15
Iceland.....	137	--	404	--
Italy.....	22,616	0.16	173,337	0.95
Netherlands.....	32,179	0.23	80,096	0.44
Norway.....	2,375	0.02	4,084	0.02
Poland.....	55,771	0.40	29,977	0.16
Romania.....	3,684	0.03	2,181	0.01
Sweden.....	2,378	0.02	2,806	0.02
Union of Soviet Socialist Republics.....	46,267	0.33	11,082	0.06
Yugoslavia.....	6,718	0.05	17,363	0.10
Other.....	9,373	0.07	56,002	0.31
Asiatic Countries.....	15,122	0.11	23,033	0.13
China.....	12,808	0.09	13,618	0.07
Japan.....	1,312	0.01	1,875	0.01
Other.....	1,002	0.01	7,540	0.04
Other Countries¹.....	16,867	0.12	34,588	0.19
Grand Totals.....	14,009,429	100.00	18,238,247	100.00

¹ Includes persons who reported themselves as stateless.

Citizenship Certificates Issued.—The following statistics show the number of citizenship certificates "issued" and more detailed information on certificates "granted" in recent years. The former, in Table 3, include both certificates granted to new citizens and those issued for various reasons to persons who are already Canadian citizens. Tables 4 to 8 refer only to "grants" which means that the holder became a Canadian citizen by the grant of such certificate.

In 1961, 96,191 Canadian citizenship certificates were issued as compared with 104,436 in 1960. During 1961 the Canadian Citizenship Registration Branch recorded 5,477 certificates of registration of births abroad, 92 declarations of retention of Canadian citizenship and 36 petitions for resumption of Canadian citizenship. Certificates issued free to persons who had had active military service numbered 547, as compared with 585 in 1960. Corresponding figures for 1960 were 4,904 registrations of births abroad, 121 declarations of retention, 30 petitions for resumption and 585 certificates issued free to persons who had had active military service.

3.—Citizenship Certificates Issued, by Status of Recipient, 1960 and 1961

Section of 1947 Act	Classification	1960	1961
		No.	No.
Sect. 34 (1) (i)	Certificates of Proof of Status—		
	Canadian citizens by birth.....	1,175	1,134
	By naturalization under former Acts.....	1,833	1,739
	British subjects with 5 years domicile before Jan. 1, 1947.....	1,132	1,141
	Women, through marriage.....	465	410
Sect. 10 (2)	British subjects with 5 years domicile after Jan. 1, 1947.....	7,567	7,938
Sect. 10 (1)	Aliens.....	40,599	36,402
Sect. 10 (5)	Minors whose parents have been granted Certificates.....	13,562	11,454
Sect. 11 (3)	Minors under special circumstances.....	188	215
Sect. 10 (3)	Women who regained lost Canadian citizenship through marriage.....	190	188
Sect. 10 (4)	Canadians who regained lost status by naturalization outside Canada.....	120	127
Sect. 11 (1)	Doubtful cases who now have been awarded Certificates.....	5	2
Sect. 11 (2)	Adopted and legitimated persons.....	149	146
	Replacement Certificates.....	1,510	1,648
	Miniature certificates of citizenship (issued since Oct. 18, 1955, to Canadian citizens).....	35,911	33,611
	Totals¹.....	104,406	96,155

¹ Exclusive of resumptions of Canadian citizenship, such issues numbering 30 in 1960 and 36 in 1961.

Characteristics of Persons Granted Citizenship Certificates in 1961.—Comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available since 1953; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality.

Of the 56,476 persons granted citizenship in 1961, 1 p.c. had migrated to Canada before 1921, 3 p.c. in the period 1921-40, 12 p.c. in the period 1941-50 and 84 p.c. since 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 16 p.c. in Quebec, 55 p.c. in Ontario, 15 p.c. in the Prairie Provinces and 12 p.c. in British Columbia. Just over 84 p.c. of them resided in urban centres.

About 18 p.c. of the persons naturalized during 1961 had been citizens of Germany, 17 p.c. had been citizens of Italy, 17 p.c. had owed allegiance to a British Commonwealth country, 12 p.c. had been citizens of the Netherlands, 5 p.c. reported former allegiance to countries now parts of the U.S.S.R., and Poland was the country of allegiance for 5 p.c. Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia, Hungary, Germany, Czechoslovakia or Austria.

Of the males granted citizenship certificates in 1961, 22 p.c. were reported in manufacturing and mechanical occupations, 11 p.c. were employed in construction, 9 p.c. were labourers in other than primary industries, 9 p.c. were in professional occupations, 8 p.c. were in service, 4 p.c. in agriculture, 4 p.c. in clerical occupations and almost 5 p.c. in proprietary and managerial occupations. Of the females granted certificates, 50 p.c. were homemakers and among those employed outside the home, 29 p.c. were in clerical occupations, 26 p.c. were in manufacturing and mechanical occupations and 26 p.c. in service occupations.

4.—Persons Granted Citizenship Certificates in 1961, by Province of Residence, Rural and Urban, and Period of Immigration to Canada

Residence	Period of Immigration					Born in Canada ¹	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1961		
Rural	No.	No.	No.	No.	No.	No.	No.
Residing in Canada	101	314	123	1,452	6,854	20	8,864
Newfoundland.....	—	—	—	3	31	—	34
Prince Edward Island.....	—	—	—	2	23	—	25
Nova Scotia.....	2	1	4	30	74	1	112
New Brunswick.....	—	—	—	18	168	—	186
Quebec.....	8	15	3	70	574	2	672
Ontario.....	15	79	33	848	3,880	2	4,857
Manitoba.....	9	29	16	55	179	—	288
Saskatchewan.....	20	58	24	71	157	5	335
Alberta.....	25	79	30	148	508	4	794
British Columbia.....	22	53	13	203	1,183	6	1,480
Yukon and N.W.T.....	—	—	—	4	77	—	81
Urban							
Residing in Canada	466	735	272	5,130	40,808	70	47,481
Newfoundland.....	—	1	2	3	86	—	92
Prince Edward Island.....	1	—	—	2	15	—	18
Nova Scotia.....	6	5	3	32	206	—	252
New Brunswick.....	2	4	1	26	122	—	155
Quebec.....	76	129	50	679	7,623	16	8,573
Ontario.....	127	267	113	2,670	22,986	17	26,180
Manitoba.....	40	70	21	351	1,854	7	2,343
Saskatchewan.....	19	38	15	102	606	3	683
Alberta.....	69	112	45	546	3,159	10	3,941
British Columbia.....	124	107	22	713	4,184	17	5,167
Yukon and N.W.T.....	2	2	—	6	67	—	77
Rural and Urban							
Residing in Canada	567	1,049	395	6,582	47,662	90	56,345
Newfoundland.....	—	1	2	6	117	—	126
Prince Edward Island.....	1	—	—	4	38	—	43
Nova Scotia.....	8	6	7	62	280	—	364
New Brunswick.....	2	4	1	44	290	1	341
Quebec.....	84	144	53	749	8,197	18	9,245
Ontario.....	142	346	146	3,518	26,866	19	31,037
Manitoba.....	49	99	37	405	2,033	7	2,631
Saskatchewan.....	39	96	39	173	663	8	1,018
Alberta.....	94	191	75	694	3,667	14	4,735
British Columbia.....	146	160	35	916	5,367	23	6,647
Yukon and N.W.T.....	2	2	—	10	144	—	158
Residing Outside Canada	1	1	1	18	98	12	131
Totals, Naturalized	568	1,050	396	6,600	47,760	102	56,476

¹ Canadian-born persons who lost their citizenship by marriage; this applies to females only.

5.—Persons Granted Citizenship Certificates in 1960 and 1961, by Age Group and Sex

Age Group	1960			1961		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
0 - 4 years.....	54	46	100	47	45	92
5 - 9 ".....	1,445	1,245	2,690	1,078	969	2,047
10 - 14 ".....	3,122	2,837	5,959	2,667	2,406	5,073
15 - 19 ".....	2,397	2,088	4,485	2,156	1,925	4,081
20 - 24 ".....	3,188	2,393	5,581	3,054	2,224	5,278
25 - 29 ".....	5,315	3,469	8,784	4,791	3,294	8,085
30 - 34 ".....	6,013	4,150	10,163	5,464	3,670	9,134
35 - 39 ".....	4,746	3,596	8,342	4,527	3,352	7,879
40 - 44 ".....	2,799	2,094	4,893	2,610	1,981	4,591
45 - 49 ".....	2,451	1,720	4,171	2,070	1,512	3,582
50 - 54 ".....	1,539	1,300	2,839	1,388	1,221	2,609
55 - 59 ".....	976	968	1,944	914	883	1,797
60 - 64 ".....	627	610	1,237	563	563	1,126
65 - 69 ".....	351	349	700	302	363	665
70 - 74 ".....	152	164	316	164	131	295
75 + ".....	77	97	174	77	65	142
Totals, All Ages.....	35,252	27,126	62,378	31,872	24,604	56,476

6.—Persons Granted Citizenship Certificates in 1960 and 1961, by Occupation and Sex

Occupation	1960			1961		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Proprietary and managerial.....	1,323	135	1,458	1,431	140	1,571
Professional.....	2,612	744	3,356	2,733	767	3,500
Clerical.....	1,333	2,266	3,599	1,236	2,131	3,367
Transportation and communication.....	1,292	69	1,361	1,020	60	1,080
Commercial and financial.....	1,140	419	1,559	1,038	353	1,391
Service.....	2,333	1,822	4,155	2,553	1,949	4,502
Agricultural.....	1,680	50	1,730	1,397	42	1,439
Fishing, trapping, logging.....	229	—	229	220	—	220
Mining.....	497	—	497	408	—	408
Manufacturing and mechanical.....	7,876	1,951	9,827	7,037	1,937	8,974
Construction.....	4,273	5	4,278	3,613	13	3,626
Labourers, not in primary industries.....	3,489	9	3,498	2,911	18	2,929
Homemakers.....	—	13,866	13,866	—	12,256	12,256
No occupation (including students, retired, etc.).....	2,681	1,738	4,419	2,707	1,755	4,462
Children under 14 years of age.....	4,029	3,587	7,616	3,211	2,857	6,068
Not stated ¹	465	465	930	357	326	683
Totals, All Occupations.....	35,252	27,126	62,378	31,872	24,604	56,476

¹ Mainly children over 14 years of age.

7.—Persons Granted Citizenship Certificates in 1960 and 1961, by Country of Birth and Sex

Country of Birth	1960			1961		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Albania.....	18	2	20	8	2	10
Argentina.....	17	22	39	19	23	42
Australia.....	66	53	119	63	50	113
Austria.....	917	863	1,780	728	708	1,436
Belgium.....	563	463	1,026	496	406	902
Brazil.....	11	14	25	20	22	42
Britain.....	3,713	3,107	6,820	3,859	3,233	7,092
British Guiana.....	52	50	102	66	58	124
Bulgaria.....	33	15	48	22	7	29
Canada.....	53	187	240	63	181	244
China.....	240	171	411	425	386	811
Czechoslovakia.....	492	402	894	373	310	683
Denmark.....	443	266	709	430	259	689
Egypt.....	34	33	67	107	77	184
Finland.....	331	339	670	258	292	550
France.....	645	386	1,031	657	397	1,054
Germany.....	5,332	4,872	10,204	4,549	4,115	8,664
Greece.....	909	541	1,450	1,250	643	1,893
Hong Kong.....	23	12	35	16	32	48
Hungary.....	517	541	1,058	494	455	949
India.....	133	85	218	167	102	269
Indonesia.....	63	50	113	58	49	107
Iraq.....	21	13	34	11	7	18
Ireland, Republic of.....	510	369	879	398	294	692
Israel.....	68	44	112	83	53	136
Italy.....	6,808	3,820	10,627	6,156	3,562	9,718
Japan.....	31	65	96	28	32	60
Lebanon.....	111	54	165	133	81	214
Luxembourg.....	13	12	25	17	3	20
Malta.....	75	31	106	72	33	105
Mexico.....	15	9	24	10	19	29
Netherlands.....	4,812	3,850	8,662	3,697	3,027	6,724
Netherlands East Indies.....	22	20	42	14	11	25
New Zealand.....	23	18	39	16	9	25
Norway.....	185	96	281	165	98	263
Pakistan.....	15	11	26	17	8	25
Poland.....	2,408	1,904	4,312	1,942	1,762	3,704
Portugal.....	186	39	225	349	64	413
Romania.....	457	435	892	393	330	723
South Africa.....	99	44	143	99	89	188
Spain.....	66	43	109	81	59	140
Sweden.....	123	68	191	89	58	147
Switzerland.....	310	162	472	258	143	401
Turkey.....	41	34	75	57	46	103
Union of Soviet Socialist Republics.....	2,238	1,969	4,207	1,699	1,477	3,176
United States.....	488	294	782	483	286	769
Venezuela.....	15	9	24	13	7	20
West Indies.....	144	178	322	183	252	435
Yugoslavia.....	1,146	899	2,045	999	786	1,785
Other.....	217	155	372	282	201	483
Totals, All Countries.....	35,252	27,126	62,378	31,872	24,604	56,476
Commonwealth.....	4,474	3,809	8,283	4,707	4,115	8,822
Other Asia.....	635	484	1,119	841	690	1,531
Other Europe.....	29,474	22,373	51,847	25,520	19,265	44,785
South America.....	67	79	146	96	95	191
United States.....	488	294	782	483	286	769
Other.....	114	87	201	225	153	378

8.—Persons Granted Citizenship Certificates in 1961, by Country of Former Allegiance and Period of Immigration to Canada

Country of Former Allegiance	Period of Immigration						Born in Canada	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1955	1956-1960		
	No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth countries..	20	32	29	2,196	5,294	2,282	—	9,853
Austria.....	21	23	—	35	981	327	2	1,389
Belgium.....	8	10	10	76	480	207	2	793
Bulgaria.....	—	2	1	—	18	9	—	30
China.....	148	20	—	32	281	272	2	755
Czechoslovakia.....	1	54	45	64	167	73	3	407
Denmark.....	4	30	4	55	385	205	3	686
Estonia.....	—	—	—	154	250	31	—	435
Finland.....	9	69	3	26	374	66	3	550
France.....	11	6	1	82	670	277	—	1,047
Germany.....	12	61	16	500	7,587	2,241	10	10,427
Greece.....	4	5	3	57	1,016	876	3	1,964
Hungary.....	3	56	28	77	293	269	1	727
Israel.....	—	—	—	3	114	176	—	293
Italy.....	21	14	11	403	6,647	2,717	5	9,818
Japan.....	11	21	3	1	6	11	2	55
Latvia.....	1	—	—	162	258	67	—	488
Lebanon.....	—	1	2	2	111	111	—	227
Lithuania.....	4	15	2	136	124	27	2	310
Netherlands.....	1	9	8	717	5,391	780	—	6,906
Norway.....	7	22	1	17	157	50	5	259
Poland.....	33	190	75	898	1,170	584	13	2,963
Portugal.....	—	—	—	1	247	167	—	415
Romania.....	9	35	2	49	172	51	2	320
Spain.....	1	—	2	4	75	77	—	159
Sweden.....	9	33	—	7	72	7	4	132
Switzerland.....	3	11	6	35	221	126	7	409
Turkey.....	2	1	—	—	20	27	—	50
United States.....	158	134	81	175	208	176	27	959
Union of Soviet Socialist Republics.....	62	172	52	526	799	162	5	1,778
Yugoslavia.....	2	22	10	89	783	550	1	1,457
Other.....	3	2	1	21	175	213	—	415
Totals, All Countries..	568	1,050	396	6,600	34,546	13,214	102	56,476

CHAPTER V.—VITAL STATISTICS*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Vital statistics provide a record of population development—a measure of the pace of growth, marriage and fertility trends, the distribution of people in and entering the various age groups, the relative importance of each of the causes of death, and so on. The continuity of such data gives a constant guide to the planning, operation and evaluation of a variety of national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution.

The population data upon which vital statistics rates are computed are given in Chapter III of this volume. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202) and in other regular and special reports; in addition, certain unpublished data are available on request.

Section 1.—Summary of Vital Statistics

Table 1 gives a summary for reference purposes of the principal vital statistics of the provinces of Canada for five-year periods 1941-60 and for single years 1959-61. Table 2 shows similar data for urban centres having at least 10,000 population at the date of the 1961 Census for the year 1961 with averages for 1956-60. Corresponding data for 1921—when the collection of national vital statistics was initiated—to 1940 are shown in previous issues of the Canada Year Book.

* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

1.—Summary of Principal Vital Statistics, by Province, 1941-61

NOTE.—Figures for the years 1921, when the collection of national statistics was initiated, to 1940 are given in previous editions of the Year Book. Adjustments in intercensal populations on the basis of 1961 Census figures necessitated the revision of many of the 1959 and 1960 birth, death, natural increase and marriage rates that appeared in the 1962 Year Book.

Province and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁵	No.	Rate ⁶	No.	Rate ⁴	No.	Rate ⁷
Newfoundland—												
Av. 1941-45.....	9,292	29.8	3,681	11.8	5,611	18.0	852	92	39	4.2	2,967	9.5
" 1946-50.....	12,352	36.2	3,179	9.3	9,173	26.9	754	61	25	2.0	2,711	8.0
" 1951-55.....	13,101	34.1	2,928	7.6	10,175	26.5	598	46	24	1.8	2,836	7.4
" 1956-60.....	14,934	34.6	3,114	7.2	11,820	27.4	585	39	17	1.1	3,032	7.0
1959.....	14,826	33.6	3,179	7.2	11,647	26.4	576	39	12	0.8	2,893	6.6
1960.....	15,173	33.9	3,015	6.7	12,158	27.2	545	36	16	1.1	3,104	6.9
1961.....	15,591	34.1	3,038	6.6	12,553	27.5	588	38	11	0.7	3,306	7.2
P. E. Island—												
Av. 1941-45.....	2,180	23.7	964	10.5	1,216	13.2	114	52	9	3.9	686	7.5
" 1946-50.....	2,869	30.5	922	9.8	1,947	20.7	114	40	4	1.3	677	7.2
" 1951-55.....	2,720	27.2	923	9.2	1,797	18.0	88	32	2	0.8	623	6.2
" 1956-60.....	2,674	26.6	953	9.5	1,721	17.1	87	33	1	0.3	645	6.4
1959.....	2,720	26.9	1,007	10.0	1,713	16.9	85	31	—	—	639	6.3
1960.....	2,734	26.5	961	9.3	1,773	17.2	88	32	—	—	690	6.7
1961.....	2,838	27.1	978	9.3	1,860	17.8	93	33	1	0.4	624	6.0
Nova Scotia—												
Av. 1941-45.....	15,146	25.2	6,326	10.5	8,820	14.7	870	57	41	2.7	6,302	10.5
" 1946-50.....	17,994	28.9	6,042	9.7	11,952	19.2	760	42	22	1.2	5,525	8.9
" 1951-55.....	18,246	27.5	5,802	8.8	12,444	18.7	586	32	13	0.7	5,283	8.0
" 1956-60.....	19,097	26.9	6,062	8.5	13,035	18.4	559	29	9	0.5	5,289	7.4
1959.....	19,038	26.5	6,371	8.9	12,667	17.6	591	31	8	0.4	5,310	7.4
1960.....	19,126	26.3	6,102	8.4	13,024	17.9	565	30	4	0.2	5,250	7.2
1961.....	19,382	26.3	6,135	8.3	13,247	18.0	538	28	4	0.2	5,292	7.2
New Brunswick—												
Av. 1941-45.....	13,037	28.2	5,050	10.9	7,987	17.3	960	74	42	3.2	4,433	9.6
" 1946-50.....	16,878	34.0	4,886	9.8	11,992	24.2	1,015	60	23	1.4	4,864	9.8
" 1951-55.....	16,496	31.0	4,576	8.6	11,920	22.4	717	43	16	0.9	4,306	8.1
" 1956-60.....	16,567	29.0	4,640	8.1	11,927	20.9	567	34	8	0.5	4,357	7.6
1959.....	16,486	28.3	4,747	8.2	11,739	20.1	536	33	6	0.4	4,310	7.4
1960.....	16,341	27.7	4,670	7.9	11,671	19.8	488	30	10	0.6	4,430	7.5
1961.....	16,590	27.7	4,695	7.9	11,895	19.8	434	26	8	0.5	4,504	7.5
Quebec—												
Av. 1941-45.....	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68	318	3.2	33,126	9.6
" 1946-50.....	115,496	30.4	33,722	8.9	81,773	21.5	6,205	54	227	2.0	34,874	9.2
" 1951-55.....	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44	149	1.2	35,584	8.3
" 1956-60.....	139,844	28.6	35,714	7.3	104,130	21.3	5,000	36	105	0.7	36,798	7.5
1959.....	142,383	28.3	36,390	7.2	105,993	21.1	4,735	33	104	0.7	37,124	7.4
1960.....	137,850	26.8	35,129	6.8	102,721	20.0	4,159	30	85	0.6	36,211	7.0
1961.....	137,174	26.1	37,044	7.0	100,130	19.1	4,319	31	89	0.6	35,943	6.8
Ontario—												
Av. 1941-45.....	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42	197	2.5	38,042	9.7
" 1946-50.....	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36	129	1.2	44,084	10.3
" 1951-55.....	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28	83	0.6	45,213	9.1
" 1956-60.....	152,688	26.4	49,431	8.5	103,257	17.9	3,741	25	65	0.4	46,482	8.0
1959.....	157,124	26.3	50,600	8.5	106,524	17.8	3,773	24	73	0.5	46,598	7.8
1960.....	159,245	26.1	51,484	8.4	107,761	17.7	3,745	24	55	0.3	45,855	7.5
1961.....	157,663	25.3	50,997	8.2	106,666	17.1	3,626	23	67	0.4	44,434	7.1
Manitoba—												
Av. 1941-45.....	15,831	21.8	6,633	9.1	9,198	12.7	814	51	41	2.6	7,295	10.0
" 1946-50.....	19,325	25.9	6,702	9.0	12,623	16.9	810	42	24	1.3	7,605	10.2
" 1951-55.....	21,321	26.4	6,775	8.4	14,546	18.0	675	32	15	0.7	7,104	8.8

For footnotes, see end of table.

1.—Summary of Principal Vital Statistics, by Province, 1941-61—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ³	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁴	No.	Rate ³
Manitoba—concl.												
Av. 1956-60.....	22,408	25.6	7,293	8.3	15,115	17.3	671	30	10	0.5	6,600	7.5
1959.....	22,801	25.6	7,421	8.3	15,380	17.3	615	27	14	0.6	6,661	7.5
1960.....	23,237	25.6	7,471	8.2	15,766	17.4	698	30	9	0.4	6,606	7.3
1961.....	23,288	25.3	7,369	8.0	15,919	17.3	588	25	13	0.6	6,512	7.1
Saskatchewan—												
Av. 1941-45.....	18,444	21.7	6,437	7.6	12,007	14.1	858	47	52	2.8	6,541	7.7
" 1946-50.....	21,907	26.3	6,473	7.8	15,434	18.5	883	40	29	1.3	7,413	8.9
" 1951-55.....	23,554	27.5	6,547	7.6	17,007	19.9	743	32	16	0.7	6,876	8.0
" 1956-60.....	24,046	26.9	6,753	7.5	17,293	19.4	634	26	9	0.4	6,395	7.1
1959.....	24,319	26.8	7,003	7.7	17,316	19.1	626	26	10	0.4	6,388	7.0
1960.....	24,088	26.3	6,868	7.5	17,220	18.8	637	26	10	0.4	6,209	6.8
1961.....	23,994	25.9	7,107	7.7	16,887	18.2	618	26	6	0.3	6,149	6.6
Alberta—												
Av. 1941-45.....	18,845	23.7	6,355	8.0	12,490	15.7	827	44	46	2.4	7,977	10.0
" 1946-50.....	24,290	28.4	6,814	8.0	17,476	20.4	889	37	25	1.0	9,090	10.6
" 1951-55.....	31,087	30.6	7,527	7.4	23,560	23.2	894	29	15	0.5	9,750	9.6
" 1956-60.....	36,920	30.6	8,329	6.9	28,591	23.7	940	25	13	0.3	10,230	8.5
1959.....	38,080	30.5	8,481	6.8	29,599	23.7	922	24	14	0.4	10,402	8.3
1960.....	39,009	30.2	8,888	6.9	30,121	23.3	1,022	26	7	0.2	10,482	8.1
1961.....	38,914	29.2	8,863	6.7	30,051	22.5	1,044	27	9	0.2	10,474	7.9
British Columbia—												
Av. 1941-45.....	17,705	19.8	9,368	10.5	8,337	9.3	684	39	46	2.6	9,535	10.7
" 1946-50.....	25,859	24.0	10,992	10.2	14,867	13.9	868	34	31	1.2	11,564	10.7
" 1951-55.....	31,347	25.1	12,233	9.8	19,114	15.3	856	27	17	0.5	11,131	8.9
" 1956-60.....	38,930	25.7	13,080	9.2	24,950	16.5	1,011	26	16	0.4	11,955	7.9
1959.....	39,971	25.5	14,336	9.1	25,635	16.4	994	25	17	0.4	11,910	7.6
1960.....	40,116	25.0	14,696	9.2	25,420	15.8	946	24	19	0.5	11,203	7.0
1961.....	38,591	23.7	14,403	8.8	24,188	14.9	945	24	10	0.3	10,964	6.7
Yukon Territory—												
Av. 1941-45.....	105	21.0	96	19.3	9	1.7	11	101	1	5.7	60	12.1
" 1946-50.....	254	31.7	91	11.4	163	20.3	16	63	--	1.6	73	9.1
" 1951-55.....	413	43.0	90	9.4	323	33.6	22	53	--	0.5	94	9.8
" 1956-60.....	505	39.4	91	7.1	414	32.3	22	44	--	0.4	109	8.5
1959.....	537	41.3	89	6.8	448	34.5	14	26	--	--	109	8.4
1960.....	538	43.8	97	6.9	441	31.5	26	48	--	--	107	7.6
1961.....	558	38.1	94	6.4	464	31.7	23	41	1	1.8	128	8.8
Northwest Territories—												
Av. 1941-45.....	383	31.9	332	27.7	51	4.2	72	189	2	4.7	95	7.9
" 1946-50.....	626	39.1	372	23.2	254	15.9	67	139	3	5.4	139	8.7
" 1951-55.....	666	40.1	284	17.1	382	23.0	78	117	2	3.6	115	6.9
" 1956-60.....	943	46.7	310	15.3	633	31.4	135	143	3	3.0	155	7.7
1959.....	990	47.1	289	13.8	701	33.3	128	129	5	5.1	130	6.2
1960.....	1,094	49.7	312	14.2	782	35.5	158	144	--	--	191	8.7
1961.....	1,117	48.6	262	11.4	855	37.2	124	111	--	--	145	6.3
Canada—⁵												
Av. 1941-45.....	277,320	23.5	115,572	9.8	161,748	13.7	15,176	55	793	2.9	114,091	9.7
" 1946-50.....	355,748	27.4	120,438	9.3	235,310	18.1	15,723	44	527	1.5	126,598	9.8
" 1951-55.....	416,334	28.0	126,666	8.5	289,668	19.5	14,552	35	353	0.8	128,915	8.7
" 1956-60.....	469,555	27.6	136,669	8.0	332,886	19.6	13,953	30	255	0.5	132,047	7.8
1959.....	479,275	27.4	139,913	8.0	339,362	19.4	13,595	28	263	0.5	132,474	7.6
1960.....	478,551	26.8	139,693	7.8	338,858	19.0	13,077	27	215	0.4	130,338	7.3
1961.....	475,700	26.1	140,985	7.7	334,715	18.4	12,940	27	219	0.5	128,475	7.0

¹ Excess of births over deaths.² Deaths under one year of age.³ Per 1,000 population.⁴ Per

1,000 live births.

⁵ Figures for Newfoundland are included from 1949.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,¹ Average 1956-60 and 1961

Note.—Urban centres are designated in this table by the following abbreviations: c. = city, t. = town, vl. = village, s.m. = suburban municipality, and d.m. = district municipality.

Province and Urban Centre	Live Births			Deaths			Natural Increase ²			Infant Mortality ³			Marriages ⁴		
	Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60	1961	
		No.	Rate ⁵		No.	Rate ⁶		No.	Rate ⁷		No.	Rate ⁸		No.	Rate ⁹
Newfoundland—															
Corner Brook, c.	940	912	36.2	127	140	5.6	813	772	30.6	36	42	46	210	196	7.8
St. John's, c.	2,010	1,988	31.2	621	509	8.0	1,489	1,479	23.2	28	49	25	689	718	11.3
Prince Edward Island—															
Charlottetown, c.	456	452	24.7	210	217	11.8	246	235	12.9	36	18	40	172	161	8.8
Nova Scotia—															
Amherst, t.	263	229	21.2	93	114	10.6	170	115	10.6	33	5	22	114	113	10.5
Dartmouth, c.	880	1,727	26.8	136	223	4.7	745	1,504	32.1	24	46	27	177	298	6.3
Glace Bay, t.	233	1,563	23.3	219	241	10.0	404	1,322	13.3	44	23	41	181	169	6.6
Halifax, c.	2,141	2,226	24.1	762	712	7.7	1,514	1,514	16.4	28	55	25	1,112	1,045	11.3
New Waterford, t.	356	359	23.9	85	93	8.8	271	266	25.1	31	20	66	85	77	7.3
Sydney, c.	1,891	1,869	27.0	259	281	8.4	691	628	18.6	14	26	29	275	269	8.0
Truro, t.	333	323	26.0	112	129	10.4	241	194	15.6	35	3	9	153	116	9.3
New Brunswick—															
Edmundston, c.	365	316	24.7	71	70	5.5	294	246	19.2	23	7	22	97	92	7.2
Fredericton, c.	497	574	26.2	169	176	8.9	328	398	20.3	23	12	21	247	267	13.6
Moncton, c.	281	288	20.7	97	79	7.1	164	139	13.7	20	7	7	65	98	7.1
Moncton, c.	1,050	1,136	23.1	274	286	6.7	776	851	19.0	22	24	21	348	362	8.3
Saint John, c.	1,499	1,568	28.4	589	586	10.6	910	982	17.8	27	35	22	532	529	9.6
Quebec—															
Alma, c.	500	469	35.2	65	77	5.8	435	392	29.4	42	24	51	107	89	6.7
Arvida, c.	429	358	24.8	41	37	2.6	388	321	22.2	19	8	5	77	84	7.8
Asbestos, c.	360	281	25.4	54	55	5.0	306	226	20.4	31	13	46	67	84	7.8
Beaconsfield, t.	198	200	20.8	32	44	4.4	166	165	10.4	17	10	12	60	98	9.8
Cap de la Madeleine, c.	723	732	27.3	152	184	5.7	570	578	21.5	32	19	20	204	169	7.4
Charlebourg, c.	232	345	24.1	45	87	6.1	187	258	18.0	31	46	45	50	159	8.6
Chicoutimi, c.	1,004	997	31.5	188	179	5.7	816	818	25.8	46	45	45	223	217	6.9
Chicoutimi North, c.	1,336	333	34.1	36	46	4.1	300	337	30.0	20	14	37	53	77	5.3
Chomedey, c.	752	910	29.9	96	139	4.6	656	771	25.3	23	23	24	82	108	9.5
Côte St. Luc, c.	238	263	19.8	34	37	2.8	204	226	17.0	24	3	11	4	13	1.0

Dorval, c.	407	398	21.4	69	76	4.1	388	422	17.3	18	6	15	38	51	2.7
Drummondville, c.	746	690	24.7	187	163	5.8	559	527	18.9	43	25	36	242	216	7.7
Gatineau, t.	398	501	28.5	54	64	4.9	344	437	33.6	51	17	34	65	66	5.1
Giffard, c.	292	288	38.4	54	62	6.1	238	226	22.3	32	19	31	55	59	5.8
Granby, c.	877	925	29.4	180	204	6.5	697	721	22.9	38	17	18	253	287	9.1
Grand-Mère, c.	338	398	25.2	88	103	3.45	345	295	18.7	31	10	25	96	102	6.5
Hull, c.	1,742	1,705	29.9	385	430	7.6	1,357	1,275	22.3	39	58	34	429	392	6.9
Jacques Cartier, c.	1,233	1,227	30.1	202	180	4.4	1,031	1,047	25.7	36	26	21	193	217	5.3
Joliette, c.	509	486	26.9	174	183	10.1	335	303	16.8	39	17	35	201	156	6.6
Jonquière, c.	992	870	30.4	138	136	4.8	854	734	25.6	35	21	24	24	170	6.9
Kénogami, c.	392	367	31.1	51	51	4.3	341	316	26.8	25	12	33	90	110	9.3
Lachine, c.	886	850	22.0	274	284	7.4	612	566	14.6	22	19	22	264	262	6.8
LaSalle, c.	315	259	23.6	99	76	6.9	216	183	16.7	41	5	19	53	64	5.8
La Tuque, c.	858	968	31.3	155	198	6.3	703	772	25.0	18	27	28	95	117	3.8
La Fave, c.	403	355	27.3	84	80	6.1	319	275	15.7	41	13	37	101	86	6.6
La Fave, c.	258	257	23.2	77	87	7.5	181	180	15.7	36	12	45	83	93	8.1
Laval des Rapides, t.	440	539	28.0	74	88	4.5	366	451	23.4	28	16	30	39	73	4.1
Lévis, c.	320	318	21.0	118	113	7.5	202	205	13.5	40	6	19	87	84	5.6
Longueuil, c.	862	690	28.6	136	185	7.7	546	516	21.0	23	9	13	171	138	5.7
Magog, c.	311	337	23.7	87	96	7.3	256	215	16.4	29	11	35	106	113	8.6
Montreal, c.	29,258	27,903	23.4	10,185	10,073	8.5	19,073	17,830	14.9	28	657	24	11	10,254	8.6
Montreal North, c.	1,128	1,461	30.2	192	292	6.0	936	1,169	24.2	28	47	32	132	213	4.4
Mount Royal, t.	276	289	13.6	96	120	5.7	180	169	7.9	21	4	14	160	124	5.9
Noranda, c.	341	328	28.6	54	42	3.7	287	286	24.9	36	8	24	80	84	7.3
Ottawa, c.	337	324	10.5	294	277	9.0	43	47	1.5	19	25	19	273	262	8.5
Pont aux Trembles, c.	510	577	25.3	120	182	5.3	390	395	18.0	36	14	24	52	98	4.5
Pont de la Plaque, c.	448	395	17.4	111	126	5.5	337	269	11.9	30	7	18	89	90	4.0
Pont Vieux, c.	410	487	30.3	62	72	4.5	348	415	25.8	37	8	16	76	87	5.4
Quebec, c.	4,845	3,946	22.9	1,569	1,575	9.2	2,776	2,371	13.7	39	148	38	1,656	1,495	8.7
Rimouski, t.	516	473	26.7	90	91	5.1	426	382	21.6	29	13	27	98	94	5.3
Rivière des Prairies, t.	220	229	22.8	56	63	6.3	164	166	16.5	34	9	39	38	44	4.4
Rivière du Loup, c.	653	291	26.9	101	91	8.4	204	200	18.5	31	8	27	71	62	5.7
Rouyn, c.	729	618	32.0	102	82	4.4	551	536	28.6	34	15	24	136	130	6.9
St. Foy, c.	429	493	32.4	88	110	3.7	641	553	28.7	21	15	16	59	76	2.6
St. Hyacinthe, c.	777	454	21.2	236	284	11.4	254	220	9.8	47	14	30	208	240	10.7
St. Jean, c.	661	652	24.2	192	187	6.9	615	465	17.3	27	11	17	207	207	7.7
St. Joseph, c.	261	358	25.5	180	156	6.4	511	494	20.1	35	22	34	219	220	9.0
St. Laurent, c.	1,122	1,129	21.5	233	262	5.3	899	865	17.5	17	7	20	73	90	6.2
St. Michel, c.	1,323	1,282	22.0	283	263	5.9	1,375	1,360	17.2	19	17	15	232	238	4.8
St. Thérèse, c.	376	384	29.6	188	217	7.6	311	294	25.0	26	48	22	128	151	2.7
St. Vincent de Paul, t.	413	547	45.8	46	90	7.6	311	294	25.0	31	13	34	92	99	8.4
Sept Îles, c.	442	735	51.9	45	53	3.7	338	352	47.7	42	8	15	45	60	5.4
Shawinigan, c.	864	757	23.5	179	154	0.0	685	682	48.1	41	23	30	236	259	8.1
Shawinigan South, vl.	338	288	22.7	450	492	7.4	288	236	18.6	33	8	28	65	73	5.8
Sherbrooke, c.	1,771	1,779	26.7	482	462	7.4	1,289	1,287	19.3	29	43	24	515	494	7.4
Sillery, c.	271	238	16.9	78	72	5.1	193	166	11.8	31	9	38	72	78	5.5
Sorel, c.	449	381	18.9	138	136	9.8	311	213	12.4	44	13	34	110	128	7.5
Theford Mines, c.	668	596	22.2	138	126	8.2	550	560	21.3	35	17	29	146	141	6.5
Trois Rivières, c.	1,512	1,380	25.8	405	457	8.5	1,071	923	17.3	35	42	30	459	411	7.7
Val d'Or, t.	420	403	36.7	63	62	5.6	357	341	31.1	39	19	47	90	79	7.2

For footnotes, see end of table, p. 226.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,¹ Average 1956-60 and 1961—continued

	Live Births			Deaths			Natural Increase ²			Infant Mortality ³			Marriages ⁴		
	1961		Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60	1961		Av. 1956-60
	No.	Rate ⁵		No.	Rate ⁶		No.	Rate ⁶		No.	Rate ⁶		No.	Rate ⁶	
Quebec—concluded															
Valleyfield, c.....	791	26.6	196	223	8.2	595	503	18.4	25	34	239	186	6.8		
Verdun, c.....	1,823	21.0	617	601	7.7	1,208	1,045	13.3	23	31	19	620	6.4		
Victoriaville, t.....	517	26.8	142	168	9.0	375	1,333	17.8	43	22	44	153	8.3		
Westmount, c.....	252	9.7	275	256	10.2	-23	-14	-0.5	23	11	45	379	13.8		
Ontario—															
Barrie, c.....	572	27.9	158	191	9.0	414	399	18.9	28	24	41	197	8.7		
Belleville, c.....	945	25.8	229	250	8.2	416	541	17.6	23	14	18	245	7.9		
Brampton, t.....	989	29.6	107	134	7.3	282	413	22.3	22	13	24	130	7.7		
Brantford, c.....	1,373	21.1	498	543	9.8	715	623	11.3	22	18	15	464	8.2		
Brockville, t.....	1,166	21.8	164	140	7.9	207	246	13.9	26	5	13	161	9.5		
Burlington, t.....	715	24.0	149	256	5.4	570	871	18.6	16	18	16	148	4.5		
Chatham, c.....	1,197	27.1	251	234	7.8	398	573	19.3	27	21	26	272	9.6		
Cobourg, t.....	937	25.3	107	110	10.3	130	159	15.0	29	9	33	73	6.5		
Cornwall, c.....	1,162	28.9	310	330	7.6	852	931	21.3	33	33	26	361	7.6		
Dundas, t.....	1,278	20.8	126	109	8.4	152	159	12.4	16	6	22	80	7.0		
Eastview, t.....	975	42.0	119	151	6.1	856	880	35.9	22	30	29	167	7.7		
Forest Hill, vl.....	234	22.5	151	160	7.8	83	65	3.2	16	4	18	18	7		
Fort William, c.....	1,063	109.24.5	343	346	7.7	720	763	16.8	24	20	18	384	352	7.8	
Galt, c.....	1,594	63.5	235	229	8.2	359	436	15.3	19	13	20	221	220	7.9	
Georgetown, t.....	987	30.1	47	54	5.2	220	255	24.9	22	6	19	52	48	4.7	
Guelph, c.....	6,878	24.0	332	331	8.3	655	627	15.7	24	35	37	343	324	8.1	
Hamilton, c.....	6,824	24.4	2,102	2,362	8.6	4,185	4,316	15.8	21	128	19	2,413	2,295	8.4	
Kenora, t.....	287	24.1	102	99	9.1	185	164	15.0	35	2	8	107	92	8.4	
Kingston, c.....	1,358	26.9	487	449	8.4	871	990	18.5	25	41	28	485	516	9.6	
Kitchener, c.....	1,783	27.1	513	553	7.4	1,270	1,468	19.7	21	40	20	681	587	7.9	
Leaside, t.....	225	16.5	129	170	9.2	96	137	7.3	32	6	13	87	70	3.8	
Lindsay, t.....	242	24.5	131	144	12.6	111	101	8.9	35	24	112	110	9.6		
London, c.....	2,573	25.2	1,090	1,470	8.7	1,483	2,808	16.5	28	96	48	1,248	1,292	7.6	
Long Branch, vl.....	2,331	29.4	84	71	6.4	247	263	23.0	25	5	15	90	75	6.8	
Manitowish, t.....	422	50.6	106	146	8.0	316	360	19.8	21	12	18	186	180	9.9	
New Toronto, t.....	306	36.5	93	102	7.6	213	263	19.7	24	33	82	74	6.5		
Niagara Falls, c.....	559	50.2	235	225	10.1	324	277	12.4	24	9	18	397	260	10.9	
Niagara Bay, c.....	723	68.2	188	202	8.5	535	480	20.2	24	11	16	280	92	8.9	
Oakville, t.....	263	23.4	80	74	7.1	183	160	15.5	25	6	21	128	8.9		
Oshawa, c.....	378	40.9	159	150	9.8	219	259	16.9	25	12	29	153	103	10.0	
Oshawa, c.....	1,562	26.6	361	408	6.5	1,231	1,253	20.1	21	35	21	471	466	7.5	

	5,938	6,223	23.2	2,170	2,232	8.3	3,768	3,991	14.9	25	148	2,139	2,147	8.0
Ottawa, c.....	5,938	6,223	23.2	2,170	2,232	8.3	3,768	3,991	14.9	25	148	2,139	2,147	8.0
Oshawa, c.....	593	623	21.4	228	232	10.8	367	384	10.6	20	2	5	163	172
Pembroke, c.....	538	535	31.1	155	186	9.3	267	254	22.9	18	34	185	183	10.9
Peterborough, c.....	1,138	1,092	23.1	414	444	9.1	724	648	22.9	36	13	16	389	341
Port Arthur, c.....	1,054	1,085	23.5	394	412	9.1	660	663	14.7	23	24	23	390	405
Port Colborne, t.....	398	375	25.2	105	114	7.7	293	291	17.5	25	6	23	140	123
Preston, t.....	247	264	22.8	98	90	7.8	149	174	15.0	25	6	23	123	8.3
Richmond Hill, t.....	399	434	26.4	62	63	3.8	337	371	22.6	16	5	9	102	8.8
Riverside, t.....	441	450	24.9	90	87	4.8	351	363	20.1	16	5	11	71	5.5
St. Catharines, c.....	2,428	1,873	20.7	640	658	7.8	1,451	1,215	14.4	22	33	18	638	3.0
St. Thomas, c.....	428	465	24.4	272	242	12.1	1,184	1,013	8.6	21	12	28	263	6.8
Sarnia, c.....	1,406	1,416	27.8	339	349	6.8	1,067	1,067	21.0	23	30	21	263	10.3
Sault Ste. Marie, c.....	1,163	1,172	27.2	309	333	7.7	1,054	839	19.5	22	20	17	263	6.8
Stratford, c.....	428	467	22.8	231	227	11.1	277	240	11.7	20	16	24	161	9.7
Sudbury, c.....	1,821	2,576	32.2	363	484	6.0	1,458	2,062	26.2	18	61	24	684	7.8
Thimins, t.....	801	827	28.3	232	263	9.0	569	564	19.3	34	31	27	940	9.3
Toronto, c.....	15,707	23.4	7,386	7,309	10.9	8,567	8,392	12.5	30.4	23	344	22	800	281
Trenton, c.....	438	438	33.2	103	116	8.8	330	322	24.4	25	11	25	135	131
Waterloo, c.....	492	543	25.4	133	119	5.6	359	434	19.8	23	13	24	126	12.2
Welland, c.....	390	869	24.1	161	250	6.9	229	619	17.2	23	20	23	268	7.1
Whitby, t.....	298	369	25.1	116	146	9.9	182	223	15.2	21	6	16	100	118
Windsor, c.....	2,825	2,511	22.0	1,158	1,190	10.4	1,667	1,321	11.6	27	64	25	1,319	8.0
Woodstock, c.....	445	445	21.7	183	176	8.6	299	269	13.1	23	7	16	175	10.0
Winnipeg, c.....	6,154	2,607	9.8	3,536	3,547	13.4	2,847	2,675	10.1	26	139	23	2,847	8.5
Manitoba—														
Brandon, c.....	680	684	24.3	228	271	9.6	452	413	14.7	22	23	34	248	8.4
Flin Flon, t.....	314	274	24.7	45	44	4.0	269	230	20.7	21	5	18	95	6.8
Fort Garry, s.m.....	449	429	24.5	84	81	4.6	365	348	19.9	21	6	14	57	71
Kildonan East, c.....	600	628	23.0	126	139	5.1	474	489	17.9	21	8	13	106	134
Kildonan West, c.....	386	453	22.6	99	116	5.8	287	337	16.8	13	3	7	50	58
Portage la Prairie, c.....	367	367	29.6	95	96	7.7	272	271	21.9	23	11	30	115	112
St. Boniface, c.....	962	1,078	28.7	305	346	9.2	657	732	19.5	23	18	17	280	287
St. James, c.....	715	692	20.4	210	222	6.5	505	470	13.9	22	19	27	214	281
St. Vital, s.m.....	618	660	24.2	156	169	6.2	462	491	18.0	23	8	12	110	6.5
Transcona, t.....	324	413	29.0	66	77	5.4	258	336	23.6	22	6	15	45	52
Winnipeg, c.....	6,154	2,607	9.8	3,536	3,547	13.4	2,847	2,675	10.1	26	139	23	2,847	8.5
Saskatchewan—														
Moose Jaw, c.....	909	821	24.7	323	342	10.3	586	479	14.4	21	12	15	206	9.3
North Battleford, c.....	305	349	31.1	84	81	7.2	221	268	23.9	28	8	23	128	11.8
Prince Albert, c.....	642	770	31.9	173	178	7.4	469	592	24.5	30	14	18	273	283
Regina, c.....	2,922	3,233	28.8	681	750	6.7	2,241	2,483	22.1	23	74	23	1,004	11.9
Saskatoon, c.....	2,504	2,905	30.4	650	735	7.7	1,854	2,170	22.7	21	65	22	876	8.6
Swift Current, c.....	362	359	29.5	96	114	9.4	266	245	20.1	24	6	17	143	11.2
Alberta—														
Calgary, c.....	6,747	7,556	30.3	1,552	1,734	6.9	5,195	5,822	23.4	23	168	22	2,186	8.9
Edmonton, c.....	8,487	8,572	30.5	1,639	1,726	6.1	6,848	6,846	24.4	22	207	24	3,116	11.1
Forest Lawn, t.....	190	431	35.1	17	33	2.7	173	398	32.4	18	21	26	20	43
Jasper Place, t.....	899	1,142	37.4	77	108	3.5	822	1,034	33.9	18	23	20	21	44
Lethbridge, c.....	897	839	26.5	249	243	6.9	648	696	19.6	22	21	22	382	369
Medicine Hat, c.....	586	645	28.3	211	226	9.2	375	419	17.1	20	20	20	271	10.4
Red Deer, c.....	580	648	33.0	106	131	6.7	474	517	26.3	23	13	20	220	12.0
														11.2

For footnotes, see end of table, p. 226.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 10,000 Population or Over,¹ Average 1956-60 and 1961—concluded

Province and Urban Centre	Live Births		Deaths		Natural Increase ²		Infant Mortality ³		Marriages ⁴	
	1961		1961		1961		1961		1961	
	Av. 1956-60	No.	Av. 1956-60	No.	Av. 1956-60	No.	Av. 1956-60	No.	Av. 1956-60	No.
British Columbia—										
Burnaby, d.m.	2,477	2,261	719	763	1,758	1,498	20	49	498	422
Chilliwack, d.m.	464	448	124	116	340	332	20	12	27	116
Coquitlam, d.m.	642	756	110	146	532	610	20	14	19	59
Dawson Creek, c.	413	465	84	62	329	403	30	11	24	113
Delta, d.m.	298	330	22.6	81	187	234	19	6	18	58
Esquimalt, d.m.	299	284	32.6	80	219	198	16.5	22	11	39
Kamloops, c.	311	328	30.6	131	180	185	18.4	21	8	24
Kelowna, c.	332	323	22.5	130	106	141	10.7	25	6	22
Langley, d.m.	346	338	20.2	135	192	182	12.4	24	11	34
Maple Ridge, d.m.	310	318	22.2	131	211	186	11.1	21	8	24
Matsqui, d.m.	418	366	25.9	152	209	212	14.8	25	10	31
Nanaimo, c.	640	591	17.7	326	314	263	7.9	18	13	36
New Westminster, c.	626	608	23.1	193	431	414	17.5	20	11	18
North Vancouver, c.	920	902	17.6	183	732	708	18.1	17	16	18
North Vancouver, d.m.	193	180	17.6	193	209	223	—	4	22	88
Oak Bay, d.m.	251	242	16.5	111	152	90	6.5	17	7	113
Penticton, c.	323	349	20.2	66	259	277	24.0	27	6	17
Port Alberni, c.	271	285	23.7	64	205	186	17.3	20	2	8
Powell River, d.m.	594	584	23.7	79	515	502	36.2	23	16	27
Prince George, c.	371	421	34.0	101	270	293	24.5	41	17	42
Prince Rupert, c.	1,085	1,211	28.0	178	877	998	23.1	18	23	107
Richmond, d.m.	1,026	1,037	21.2	384	642	642	12.9	19	20	19
Saanich, d.m.	1,709	1,955	27.7	455	517	7.3	20.4	18	41	21
Survey, d.m.	1,307	26.5	80	74	238	233	20.1	19	23	99
Trail, c.	818	7,247	18.8	4,558	3,631	2,689	6.9	21	136	4,568
Vancouver, c.	8,511	7,247	22.3	4,500	3,631	2,689	6.9	21	136	4,568
Vernon, c.	1,236	1,042	19.0	852	151	215	9.8	28	17	146
Victoria, c.	1,236	1,042	19.0	852	151	215	9.8	28	17	146
West Vancouver, d.m.	404	379	14.9	183	221	180	7.1	23	24	121

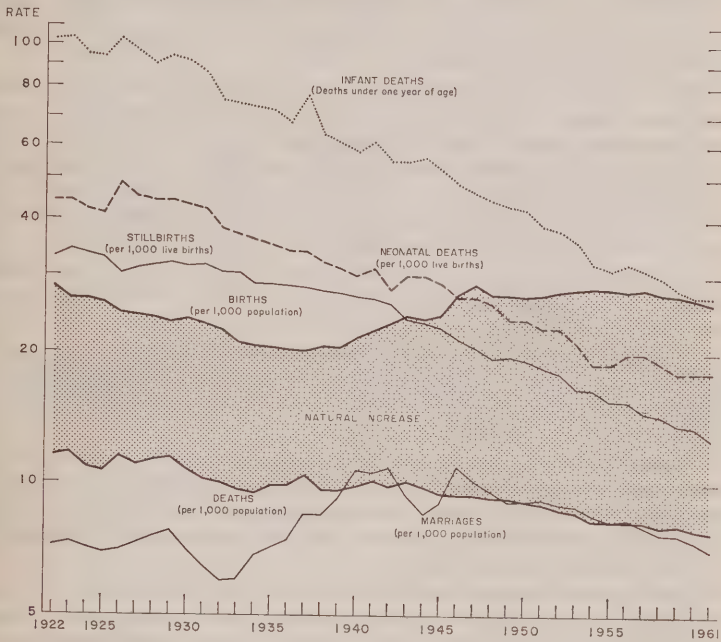
¹ As at the date of the 1961 Census: residents only.
² Per 1,000 live births.

³ Excess of births over deaths.

⁴ Deaths under one year of age.

⁵ By place of occurrence.

VITAL STATISTICS RATES, 1922 - 61



Section 2.—Births*

No accurate figures on Canadian crude† birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates for each ten-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data:—

<i>Intercensal Period</i>	<i>Estimated Average Annual Crude Birth Rate (per 1,000 Population)</i>	<i>Intercensal Period</i>	<i>Estimated Average Annual Crude Birth Rate (per 1,000 Population)</i>
1851-61.....	45	1891-1901.....	30
1861-71.....	40	1901-11.....	31
1871-81.....	37	1911-21.....	29
1881-91.....	34		

* Unless otherwise indicated, "births" in this Section refers to infants born alive; stillbirths are dealt with under a separate heading on p. 236 and under multiple births on p. 230. For international comparisons, see Section 7, pp. 256-257.

† A crude rate is one based on the total population.

The general trend in the birth rate since 1921 is shown in the chart on p. 227. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930's and during World War II to 24.3 in 1945 and in the two years following the War rose to a postwar high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5 but in 1960 it dropped to 26.8 and in 1961 to 26.1, a postwar low.

The rates in most provinces followed trends very similar to the national trend but showed some regional differences in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during the 1951-55 period than during 1946-50 while those for Quebec and the Maritimes were lower than during 1946-50. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the 1956-59 period. However, all provinces have had declining or stationary rates since about 1959-60.

It is often erroneously assumed that the Province of Quebec has not only the largest number of births annually but the highest birth rate in Canada. Since the late 1930's or early 1940's Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 220-221, shows that five provinces—Newfoundland, Alberta, New Brunswick, Prince Edward Island and Nova Scotia in that order—had higher crude rates than Quebec in 1961, followed by Saskatchewan, Ontario and Manitoba, and British Columbia.

It should be noted, however, that since these crude rates are based on the total population they do not reflect the fertility of the women of reproductive age in the different provinces or the number married within these reproductive ages. A more accurate measure of the true birth rate is one based on the number of married women between the ages of 15 and 44 (see pp. 231-234).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1961, 157,663 babies were born to Ontario mothers as compared with 137,174 to Quebec mothers. Altogether, 475,700 children were born in Canada in 1961, 3,575 fewer than the record 479,275 born in 1959 and 2,851 fewer than the number born during 1960.

Sex of Live Births.—Wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless it is so much an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930's. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries—although there is no generally accepted explanation for it—is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,061 during these four years as compared with averages of 1,054 between 1931-41 and 1,054 since 1946.

3.—Sex Ratios of Live Births, 1941-61

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
	No.	No.	No.		No.	No.	No.
1941.....	131,175	124,142	1,057	1952.....	208,070	195,489	1,064
1942.....	140,584	131,729	1,067	1953.....	214,423	203,461	1,054
1943.....	145,725	137,855	1,057	1954.....	224,168	212,030	1,057
1944.....	146,652	137,568	1,066	1955.....	227,382	215,555	1,055
1945.....	148,912	139,818	1,065	1956.....	231,697	219,042	1,058
1946.....	169,945	160,787	1,057	1957.....	241,073	228,020	1,057
1947.....	183,973	175,121	1,051	1958.....	241,875	228,443	1,058
1948.....	178,123	169,184	1,053	1959.....	246,073	233,202	1,055
1949.....	188,339	177,800	1,059	1960.....	246,029	232,522	1,058
1950.....	191,413	180,596	1,060	1961.....	244,403	231,297	1,057
1951.....	195,918	185,174	1,058				

Hospitalized Births.—In 1961 over 96 p.c. of all Canadian births occurred in hospital as compared with 88 p.c. five years previously. Table 4 shows the rise in hospitalized births in each province since 1931. Before the initiation in 1958 of the federal-provincial hospital insurance programs—in which all provinces were participating in 1961—there were rather wide variations among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas. Although some variation still exists, the operation of the hospital insurance program has probably been responsible for the noticeable increases in hospitalized births in provinces that previously had lower proportions, for example in New Brunswick where the hospital insurance plan was put into effect on July 1, 1959, and in Quebec where the plan went into effect in 1961.

4.—Percentages of Live Births Hospitalized, by Province, 1931-61

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada ¹
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1931....	11.2	19.0	12.1	7.3	38.2	43.6	32.5	47.8	65.0	..	..	26.8
1941....	32.7	50.4	30.8	17.6	67.5	73.6	63.2	77.1	87.3	..	..	48.9
1951....	88.3	87.2	70.7	53.0	93.1	93.1	95.2	93.6	97.3	87.4	32.8	79.1
1955....	93.6	93.3	83.4	66.6	96.7	95.6	97.7	95.0	98.1	89.3	45.5	86.5
1958....	95.2	93.9	84.7	71.2	97.3	95.8	97.6	96.6	98.3	87.7	44.6	88.4
1957....	96.7	95.1	86.8	75.6	97.9	96.4	98.3	97.5	98.5	91.3	38.6	90.2
1958....	99.0	96.2	85.5	79.3	98.0	96.8	98.5	97.7	98.5	92.6	42.1	91.7
1959....	99.2	98.0	93.5	82.3	98.6	97.4	98.5	98.0	98.6	88.6	45.7	93.1
1960....	99.4	98.6	97.7	85.2	99.0	98.0	99.0	98.5	98.8	93.3	51.7	94.6
1961....	99.3	98.9	99.0	92.3	99.3	98.2	98.8	98.6	98.9	92.8	57.1	96.9

¹ Excludes Newfoundland for which data are not available.

Births in Urban Centres.—Table 2, pp. 222-226, shows the number of births in 1961, as compared with the average for 1956-60, to mothers residing in each urban centre of 10,000 population or over. The table also shows crude birth rates for each centre based on the 1961 Census population. However, comparison of such rates as between different centres must be made with caution since, as previously noted, they are influenced by the proportions—and the ages—of the married females in their populations, as well as by the actual fertility of those females. Because populations of urban centres are not available for intercensal years, comparable rates cannot be computed for the 1956-60 period.

Illegitimacy.*—In 1961, over 4 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world.

5.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-61

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada ¹
ILLEGITIMATE LIVE BIRTHS													
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1941-45	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
1959.....	550	140	1,230	708	4,888	5,218	1,226	1,282	2,128	2,658	76	117	20,221
1960.....	626	126	1,249	632	4,902	5,119	1,356	1,326	2,197	2,673	84	123	20,413
1961.....	666	135	1,334	735	4,931	5,456	1,469	1,419	2,430	2,580	94	141	21,490
PERCENTAGES OF TOTAL LIVE BIRTHS													
Av. 1941-45	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
" 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
1959.....	3.7	5.1	6.5	4.3	3.4	3.3	5.4	5.3	5.6	6.6	14.2	11.8	4.2
1960.....	4.1	4.6	6.5	3.9	3.6	3.2	5.8	5.5	5.6	6.7	15.6	11.2	4.3
1961.....	4.3	4.8	6.9	4.4	3.6	3.5	6.3	5.9	6.2	6.9	16.8	12.6	4.5

¹ Figures for Newfoundland are included from 1949, and those for the Yukon and Northwest Territories from 1951.

Multiple Births.—Approximately one confinement in 90 in Canada results in the birth of more than one child as compared with one in 85 several years ago—in other words, the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. The chance of a mother delivering twins is about one in 90, triplets, one in about 10,000 and quadruplets, one in about 750,000 or more. Two sets of quadruplets were born in Canada during 1960, the first since 1957.

Other facts illustrated by Table 6 are that the proportion of stillbirths is higher among multiple than among single births, about twice as high for twins and between three and five times as high for triplets.

* The term "illegitimate", as used here, does not refer to all births conceived out of wedlock but is necessarily restricted to those in which parents reported themselves as not having been married to each other at the time of birth or registration and, in Ontario, to those in which the marital status of the mother was reported as "single" at the time of birth or registration.

6.—Single and Multiple Births, Live and Stillborn, 1958-61

Confinements and Births	Numbers				Percentages			
	1958	1959	1960	1961	1958	1959	1960	1961
Confinements.....	471,436	480,524	479,786	476,547	100.0	100.0	100.0	100.0
Single.....	466,065	475,266	474,613	471,410	98.9	98.9	98.9	98.9
Twin.....	5,334	5,205	5,112	5,102	1.1	1.1	1.1	1.1
Triplet.....	37	53	59	35	--	--	--	--
Quadruplet.....	—	—	2	—	—	—	--	—
Births.....	476,844	485,835	485,022	481,719	100.0	100.0	100.0	100.0
Single—								
Live.....	459,652	469,022	468,469	465,715	98.6	98.7	98.7	98.8
Stillborn.....	6,413	6,244	6,144	5,695	1.4	1.3	1.3	1.2
Twin—								
Live.....	10,360	10,110	9,907	9,885	97.1	97.1	96.9	96.9
Stillborn.....	308	300	317	319	2.9	2.9	3.1	3.1
Triplet—								
Live.....	106	143	168	100	95.5	89.9	94.9	95.2
Stillborn.....	5	16	9	5	4.5	10.1	5.1	4.8
Quadruplet—								
Live.....	—	—	7	—	—	—	87.5	—
Stillborn.....	—	—	1	—	—	—	12.5	—
Totals, Live Births.....	470,118	479,275	478,551	475,700	98.6	98.6	98.7	98.8
Totals, Stillborn.....	6,726	6,560	6,471	6,019	1.4	1.4	1.3	1.2

Fertility Rates.—The sex and age composition of a population is obviously an important factor in determining crude* birth, marriage and death rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will, of course, cause variations in the crude birth rate of different countries—or of different regions within a country—even though the actual rates of reproduction or *fertility* of the women in these age groups in each country or region are identical.

A more accurate measure of the fertility of a population would therefore be one based on the number of women of reproductive age, that is those 'able' to bear children, and a still more accurate measure would be one based on the number within this group that are married, that is those 'eligible', as it were, to bear children. Each type of rate has its uses, depending on the comparisons required. The two types—generally referred to as *crude fertility rates*—are compared in Table 7, and indicate the variations in each type as between provinces and the provincial trends over the five years 1957-61.

* A crude rate is one based on the total population.

7.—Crude Fertility Rates, by Province, 1957-61

Province or Territory	1957	1958	1959	1960	1961
PER 1,000 TOTAL WOMEN 15-44 YEARS OF AGE ¹					
Newfoundland.....	190.0	181.3	178.8	181.7	183.5
Prince Edward Island.....	147.8	141.0	148.6	148.6	154.6
Nova Scotia.....	137.5	134.2	134.5	134.6	135.3
New Brunswick.....	153.3	146.4	146.2	144.6	146.0
Quebec.....	135.8	132.7	131.3	124.8	121.8
Ontario.....	126.1	124.3	126.2	125.9	123.2
Manitoba.....	125.6	121.5	126.8	128.5	127.8
Saskatchewan.....	136.8	136.4	138.4	137.3	136.6
Alberta.....	146.7	147.5	148.5	148.0	143.8
British Columbia.....	127.6	126.9	127.6	126.4	120.6
Yukon Territory.....	190.0	181.9	214.8	199.3	187.2
Northwest Territories.....	243.2	255.4	260.5	266.8	253.6
Canada².....	134.0	131.6	132.3	130.2	127.6
PER 1,000 MARRIED WOMEN 15-44 YEARS OF AGE ¹					
Newfoundland.....	284.5	273.0	270.9	273.4	275.8
Prince Edward Island.....	224.2	214.9	222.4	224.8	232.0
Nova Scotia.....	194.7	189.5	191.3	192.0	190.8
New Brunswick.....	229.4	217.4	214.1	210.6	217.1
Quebec.....	218.9	212.6	209.9	199.4	194.0
Ontario.....	169.5	166.3	167.9	167.8	164.5
Manitoba.....	174.7	168.1	175.4	177.0	174.2
Saskatchewan.....	189.9	188.9	190.9	189.7	185.8
Alberta.....	194.4	194.4	194.8	194.5	186.3
British Columbia.....	163.7	163.1	163.4	162.8	155.7
Yukon Territory.....	..	..	..	..	207.2
Northwest Territories.....	..	..	..	..	320.8
Canada².....	190.8	186.6	187.0	184.1	180.2

¹ Since the number of births to women over 44 is quite small, rates are here restricted to women under 45.

² Excludes the Yukon and Northwest Territories.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 dropped from 134 in 1957 to about 128 in 1961. However, the ratio varied among the provinces from 120 to 190 over the five-year period; Newfoundland, Prince Edward Island, New Brunswick and Alberta had, on the whole, the highest rates and British Columbia, Ontario, Quebec and Manitoba, in that order, the lowest. The average annual number of infants born to every 1,000 married women ranged from 180 to 191 during the same period. According to this measure, the five eastern provinces had, on the whole, the highest rates and the five most western provinces the lowest; provincial rates ranged from 156 to 285. The provincial rates declined in varying degree during the period, notably in 1960 and 1961.

The rates shown in Table 7 are *crude* in the sense that they do not take into account differences in fertility in the component age periods within the female reproductive life span, nor the proportions of married women in each age period. It is therefore conventional practice to calculate what are termed *age-specific fertility rates*, i.e., the number of infants born annually to every 1,000 women in *each* of the reproductive age periods, again either for all women or for those who are married. Table 8 provides these two sets of rates, the former for 1941-61, the latter for census years only from 1941, since population data are not available for these by detailed age groups for intercensal years.

Another measure of fertility in a country is obtainable from what is conventionally referred to as a *gross reproduction rate*. The gross reproduction rates shown in Table 8 indicate the average number of female children born each year to each woman living

through the child-bearing ages. In other words, this figure represents the average number of females that would be born to each woman who lived to age 50 if the fertility rates of the given year remained unchanged during the whole of her child-bearing period. A gross reproduction rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself. Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930's the rate varied between 1.3 and 1.5 and since World War II has ranged between 1.7 and almost 2.0; in 1960 the rate stood at 1.893 and in 1961 at 1.868, still almost double the number required for the population to replace itself. With minor exceptions, provincial reproduction rates are also well above the replacement level.

8.—Fertility Rates per 1,000 Women, by Age Group, 1941-61

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-49)

Year	Age Group							Gross Reproduction Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
TOTAL WOMEN								
1941.....	30.7	138.4	159.8	122.3	90.0	31.6	3.7	1.377
1942.....	32.0	145.1	168.7	128.0	83.0	32.3	3.6	1.434
1943.....	32.1	146.8	175.4	131.9	86.5	31.9	3.5	1.478
1944.....	31.3	143.3	168.7	134.1	88.1	33.0	3.4	1.457
1945.....	31.6	143.3	168.8	134.3	90.3	33.5	3.7	1.462
1946.....	36.5	169.6	191.4	146.0	93.1	34.5	3.8	1.640
1947.....	42.6	189.1	206.4	150.5	93.1	34.1	3.3	1.753
1948.....	43.2	181.1	197.6	141.4	89.0	32.6	3.3	1.676
1949.....	45.2	181.5	201.2	139.7	88.8	31.5	3.2	1.678
1950.....	46.0	181.3	200.6	141.3	87.9	30.8	3.0	1.678
1951.....	48.1	188.7	198.8	144.5	86.5	30.9	3.1	1.701
1952.....	50.4	201.0	205.2	150.7	87.4	30.7	2.8	1.763
1953.....	52.0	208.2	208.4	153.2	88.1	31.2	2.9	1.812
1954.....	54.3	217.4	213.2	156.5	88.5	32.4	3.2	1.861
1955.....	54.2	218.3	215.1	153.8	89.8	32.3	2.9	1.863
1956.....	55.9	222.2	220.1	150.3	89.6	30.8	2.9	1.874
1957.....	60.2	227.1	224.1	149.4	90.7	30.7	2.8	1.907
1958.....	59.2	226.5	223.3	147.9	87.6	28.9	2.7	1.886
1959.....	60.4	233.8	226.7	147.7	87.3	28.5	2.7	1.915
1960.....	59.8	233.5	224.4	146.2	84.2	28.5	2.4	1.893
1961.....	58.2	233.6	219.2	144.9	81.1	28.5	2.4	1.868
MARRIED WOMEN								
1941.....	453.1	340.2	237.8	158.3	99.1	38.9	4.5	...
1951.....	498.5	350.4	248.1	168.7	100.6	36.6	3.7	...
1956.....	551.5	381.7	265.5	169.8	101.0	35.6	3.4	...
1961.....	541.2	374.4	255.6	161.4	89.9	32.1	2.8	...

Table 8 indicates that in 1961, considering all women whether married or not, women in their 20's were the most reproductive, as might be expected; on the average, for every 1,000 women between the ages of 20 and 25, 234 infants were born during that year or, expressed another way, about one woman out of four in that age group gave birth to a live-born infant. This compares with a rate of 219 for women in the age group 25-29, which is closer to one in five. However, among married women, teenage mothers have

consistently had the highest fertility, with one out of two bearing a child each year on the average, while almost four out of every 10 married women in their early 20's had a child every year as compared with about one in four for women in their late 20's.

During and since World War II, up to 1960, the fertility rates for young mothers—particularly those under 25—have increased, those for women in their late 20's and in their 30's have remained relatively stable, and those for women over 40 have declined. Although the fertility rate for the teenage group is highest, over half of the total infants born each year are born to mothers in their 20's (see Table 9).

Age of Parents.—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 9, as well as the average age of parents.

Over 7 p.c. of the legitimate children born in 1961 were born to mothers under 20 years of age, in over one third of the births the mother was under 25 years, and in almost two thirds, under 30 years; in one out of six births the father was under 25 years of age, and in almost 48 p.c. of all births the father was under 30 years. On the other hand, over one third (38.1 p.c.) of the illegitimate infants born were born to mothers under 20 years of age and an additional one third to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1961 was slightly over 28, and of the fathers 31.4 years; ten years ago the average ages of the parents were 28.4 and 32.1, and thirty years ago 29.2 and 33.6, respectively.

9.—Live Births, by Age of Parents, 1961

(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years.....	4,804	1.1	31,884	7.3	7,744	38.1
Under 15 years.....	..	..	34	--	196	1.0
15 years.....	..	..	312	0.1	477	2.3
16 ".....	..	..	1,578	0.4	1,074	5.3
17 ".....	..	..	4,780	1.1	1,663	8.2
18 ".....	..	..	9,765	2.2	2,176	10.7
19 ".....	..	..	15,475	3.5	2,168	10.6
20-24 ".....	75,100	17.2	128,859	29.3	6,841	33.6
25-29 ".....	130,274	29.8	124,681	28.4	2,889	14.2
30-34 ".....	108,981	24.9	87,396	19.9	1,645	8.1
35-39 ".....	67,569	15.4	49,942	11.4	909	4.5
40-44 ".....	32,700	7.5	15,296	3.5	286	1.4
45-49 ".....	12,920	3.0	1,128	0.3	18	0.1
50 years or over.....	5,320	1.2	17	--	--	--
Totals, Stated Ages.....	437,668	100.0	439,263	100.0	20,332	100.0
Ages not stated.....	1,617	...	82	...	492	...
Totals, All Ages.....	439,285	100.0	439,285	100.0	20,824	100.0
Average ages.....	31.4		28.1		23.6	

Order of Birth.—Table 10 shows the order of birth of all live-born infants in 1961 according to the age of the mother. As would be expected, 29,105 or three out of every four of the 39,628 infants born to mothers under 20 years of age were first children, whereas almost six out of every ten of the children born to mothers of 20-24 years were second or later children. This is a reflection of the earlier marriages and heavy fertility of recent years. In 1961, 230 infants were born to mothers who had not yet reached their 15th birthday.

10.—Order of Birth of Live-Born Children, by Age of Mother, 1961

(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1st child.....	228	28,877	54,688	22,868	8,381	3,000	645	30	469	119,186	25.9
2nd ".....	2	8,624	44,460	32,953	14,541	5,078	1,063	45	36	106,802	23.2
3rd ".....	—	1,628	22,809	30,239	18,756	7,838	1,592	87	9	82,958	18.0
4th ".....	—	243	9,182	19,483	16,049	8,239	1,913	113	13	55,245	12.0
5th ".....	—	24	3,244	10,985	11,019	7,031	2,007	104	7	34,421	7.5
6th ".....	—	—	968	5,822	7,347	5,275	1,558	115	4	21,091	4.6
7th ".....	—	—	261	2,887	4,886	3,818	1,348	111	8	13,319	2.9
8th ".....	—	—	51	1,417	3,327	2,997	1,196	80	3	9,071	2.0
9th ".....	—	—	21	545	2,145	2,331	921	75	—	6,038	1.3
10th ".....	—	—	3	246	1,229	1,727	828	64	—	4,097	0.9
11th ".....	—	—	2	85	712	1,220	650	62	1	2,732	0.6
12th ".....	—	—	—	28	374	871	523	66	1	1,863	0.4
13th ".....	—	—	1	8	171	650	406	57	—	1,293	0.3
14th ".....	—	—	—	3	63	369	317	44	—	796	0.2
15th ".....	—	—	—	1	26	197	232	40	1	497	0.1
16th ".....	—	—	—	—	12	105	145	28	—	291	0.1
17th ".....	—	—	—	—	—	51	99	14	—	165	—
18th ".....	—	—	—	—	1	27	60	11	—	100	—
19th ".....	—	—	—	—	—	14	32	4	—	50	—
20th or over.....	—	—	—	—	—	12	47	13	—	72	—
Not stated.....	—	—	—	—	—	—	—	—	22	22	—
Totals.....	230	39,398	135,700	127,570	89,041	50,851	15,582	1,163	574	460,109	100.0

Table 11 summarizes the pattern of family formation since 1941. The results of the immediate postwar 'baby boom' are obvious—57.9 p.c. of the infants born in 1947 were first or second children while fewer than half of the 1961 babies were first or second children.

11.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1941-61

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-49)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1941.....	32.7	21.8	13.5	32.0	100.0
1942.....	32.8	23.1	13.4	30.6	100.0
1943.....	32.2	23.7	14.2	29.9	100.0
1944.....	30.0	24.2	14.9	30.9	100.0
1945.....	28.9	24.3	15.4	31.4	100.0
1946.....	31.0	24.8	15.2	29.0	100.0
1947.....	33.0	24.9	15.0	27.2	100.0
1948.....	29.6	26.0	15.9	28.5	100.0
1949.....	27.8	26.6	16.8	28.8	100.0
1950.....	26.7	26.2	17.4	29.6	100.0
1951.....	26.7	25.8	17.6	29.9	100.0
1952.....	26.9	24.8	17.9	30.3	100.0
1953.....	26.5	25.0	18.0	30.6	100.0
1954.....	26.1	24.6	18.0	31.2	100.0
1955.....	25.5	24.4	18.2	31.9	100.0
1956.....	25.2	24.3	18.3	32.2	100.0
1957.....	25.6	23.9	18.3	32.2	100.0
1958.....	25.4	23.8	18.2	32.6	100.0
1959.....	24.8	24.0	18.2	32.9	100.0
1960.....	24.5	23.8	18.5	33.1	100.0
1961.....	24.1	23.6	18.5	33.8	100.0

Stillbirths.*—The 6,019 stillbirths in 1961 represented a ratio of 12.7 for every 1,000 fetuses born alive. As is evident from Table 12, the stillbirth rate has been decreasing steadily and has been cut by more than half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces have been reduced more than in others.

The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers, but the difference has been narrowing in recent years; in 1959, for example, the rate for unmarried mothers was actually lower than that for married mothers, but this was reversed again in 1960 and 1961.

12.—Stillbirths and Rates per 1,000 Live Births, by Province, 1941-61

Year	Born to All Mothers													Born to Unmarried Mothers ¹	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N. W. T.	Canada ²	No.	P.C. of Total
STILLBIRTHS															
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Av. 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
" 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714	291	4.51
1959.....	307	54	261	252	2,324	2,016	299	247	376	404	6	14	6,560	237	3.79
1960.....	275	36	279	246	2,346	1,960	279	221	373	437	7	12	6,471	320	5.16
1961.....	281	46	300	222	1,929	1,870	301	266	372	412	4	16	6,019	303	5.28
RATES PER 1,000 LIVE BIRTHS														Rate per 1,000 Illegitimate Live Births ¹	
Av. 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
" 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3	15.6	
1959.....	20.7	19.9	13.7	15.3	16.3	12.8	13.1	10.2	9.9	10.1	11.2	14.1	13.7	12.0	
1960.....	18.1	13.2	14.6	15.1	17.0	12.3	12.0	9.2	9.6	10.9	13.0	11.0	13.5	16.2	
1961.....	18.0	16.2	15.5	13.4	14.1	11.9	12.9	11.1	9.6	10.7	7.2	14.3	12.7	14.6	

¹ Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-50. ² Figures for Newfoundland are included from 1949.

Table 13 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be three to four times as high for mothers over 40 years of age as for mothers under 30.

* Although there are at present some provincial differences in the requirements for compulsory registration of stillbirths (i.e., with respect to minimum gestational age-limits and specific criteria of life), stillbirths, as referred to here, may be summarized as including "fetuses of 28 or more weeks of gestation, which did not show any sign of life".

The average age of mothers who bore stillborn children in 1961 was 30.2 years; as shown in Table 9, the average age of mothers who bore legitimate live-born children was 28.1 and of those who bore illegitimate live-born offspring was 23.6.

13.—Stillbirths and Rates per 1,000 Live Births, by Age of Mother, 1961

(Exclusive of Newfoundland)

Age Group of Mother	Live Births	Stillbirths	Stillbirth Rate per 1,000 Live Births
	No.	No.	No.
Under 20 years.....	39,628	400	10.1
20 — 24 ".....	135,700	1,136	8.4
25 — 29 ".....	127,570	1,388	10.9
30 — 34 ".....	89,041	1,232	13.8
35 — 39 ".....	50,851	1,020	20.1
40 — 44 ".....	15,582	490	31.4
45 — 49 ".....	1,146	52	45.4
50 years or over.....	17	1	58.8
Ages not stated.....	574	19	...
Totals, All Ages.....	460,109	5,738	12.5
Average age of mothers.....	30.2		

Section 3.—Deaths*

No official crude† death rates are available prior to 1921, but some indication of these may be gleaned from studies of the early censuses as follows:—

Intercensal Period	Estimated Average Annual Crude Death Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Crude Death Rate (per 1,000 Population)
1851-61.....	22	1891-1901.....	16
1861-71.....	21	1901-11.....	13
1871-81.....	19	1911-21.....	13
1881-91.....	18		

As is typical of pioneer populations, Canada had a high death rate in the mid-1850's when the country was still in the throes of pioneer settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it is assumed that, while mortality at all ages was high, the rate among infants, children and young adults must have been particularly so since even in the 1920's mortality in these ages was still quite high. With the gradual increase in population density and in urbanization and improved sanitation and medical services, the crude rate was gradually halved during the 80 years between 1851 and 1930, dropping from about 22 to 11. It declined steadily to slightly over 8 in the late 1950's and dropped to a low of 7.7 in 1961. This is one of the lowest crude rates in the world.

Table 1, pp. 220-221, shows the trends since 1941 in the several provinces. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is mainly attributable to a high proportion of people in the older age groups.

* For international comparisons, see Section 7, pp. 256-257.

† A crude rate is one based on the total population.

Subsection 1.—General Mortality

Age and Sex Distribution of Deaths.—During the period of national vital statistics (1921 to date), the mortality pattern at all ages was steeply downward. Of major significance in lowering the over-all death rate, referred to on p. 237, were the reductions in infant mortality, in childhood death rates and in those of young adults. In 1931 over 19 p.c. of all male deaths occurred among persons of five to 45 years of age; in 1961 only a little over 10 p.c. of all male deaths took place in this age group. Among females in the same age group the proportion dropped from just under 22 p.c. to less than 8 p.c. in the same period. While death rates for males up to age 45 were roughly halved during the past 25 years, those for females under 45 years were reduced as much as three to four times. In other words, the death rates for females at every age declined more than those for males; the male rates have almost always been consistently higher than those for females and the differences are widening. The crude male death rate stood at 9.0 per 1,000 total male population in 1961 as compared with only 6.5 for females.

Despite the very considerable reduction in infant mortality over the past 25 or 30 years, more deaths still occur in the first year of life than in any other single year. Of the 104,517 deaths occurring in 1931, 25,737 or almost one quarter were of children under five years of age and over three quarters of those were of children under one year of age. On the other hand, of the 140,985 deaths in 1961, 14,938 or 11 p.c. were of children under five years of age, and of those 12,940 or over 86 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.

The reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death. In 1931 the average age at death of males was 43.1 years and of females 44.8 years; by 1961 this had advanced to 59.7 years and 63.1 years, respectively.

These trends are indicated clearly in Table 14.

14.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1961

Age Group	1931 ¹		1941 ¹		1951		1961	
	Male	Female	Male	Female	Male	Female	Male	Female
NUMBERS								
Under 1 year.....	11,667	8,693	8,788	6,448	8,375	6,298	7,447	5,493
1 — 4 years.....	2,844	2,533	1,878	1,566	1,421	1,151	1,154	844
5 — 9 ".....	1,241	963	888	670	711	466	672	405
10 — 14 ".....	821	806	787	536	461	284	527	278
15 — 19 ".....	1,311	1,132	1,118	823	721	457	840	322
20 — 24 ".....	1,502	1,453	1,332	1,039	1,009	549	969	418
25 — 29 ".....	1,388	1,414	1,317	1,173	988	660	895	562
30 — 34 ".....	1,301	1,432	1,211	1,148	1,070	778	1,041	880
35 — 39 ".....	1,512	1,574	1,497	1,242	1,281	1,015	1,422	1,099
40 — 44 ".....	1,888	1,493	1,744	1,464	1,756	1,266	1,916	1,617
45 — 49 ".....	2,314	1,738	2,416	1,817	2,463	1,607	2,993	2,237
50 — 54 ".....	2,855	1,993	3,355	2,227	3,625	2,083	4,242	2,749
55 — 59 ".....	3,057	2,246	4,394	2,851	4,741	2,832	5,494	3,725
60 — 64 ".....	3,583	2,855	5,288	3,483	6,485	3,902	7,028	5,304
65 — 69 ".....	4,249	3,348	6,057	4,412	8,007	5,119	10,582	7,058
70 — 74 ".....	4,867	4,073	6,495	4,981	8,748	6,439	10,970	8,290
75 — 79 ".....	4,368	4,029	6,421	5,461	8,254	6,130	8,635	7,871
80 — 84 ".....	3,206	3,215	5,020	4,908	6,232	6,319	7,337	8,782
85 years or over.....	2,555	2,998	3,846	4,540	5,336	6,319	7,337	8,782
Totals, All Ages.....	56,529	47,988	63,852	50,787	71,564	54,259	82,709	58,276

¹ Excludes the Yukon and Northwest Territories.

14.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1961—concluded

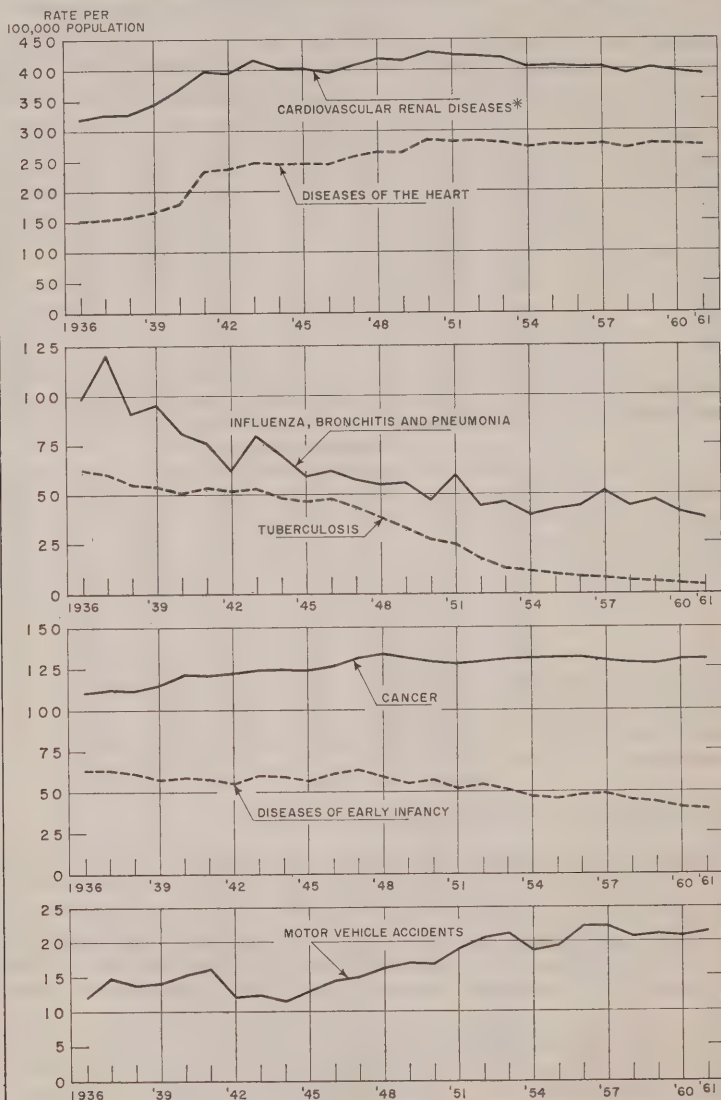
Age Group	1931 ¹		1941 ¹		1951		1961	
	Male	Female	Male	Female	Male	Female	Male	Female
PERCENTAGES								
Under 1 year.....	20.6	18.1	13.8	12.7	11.7	11.6	9.0	9.4
1 — 4 years.....	5.0	5.3	2.9	3.1	2.0	2.1	1.4	1.4
5 — 9 ".....	2.2	2.0	1.4	1.3	1.0	0.9	0.8	0.7
10 — 14 ".....	1.5	1.7	1.2	1.1	0.6	0.5	0.6	0.5
15 — 19 ".....	2.3	2.4	1.8	1.6	1.0	0.8	1.0	0.6
20 — 24 ".....	2.7	3.0	2.1	2.0	1.4	1.0	1.2	0.6
25 — 29 ".....	2.5	2.9	2.1	2.3	1.4	1.2	1.1	0.7
30 — 34 ".....	2.3	3.0	1.9	2.3	1.5	1.4	1.3	1.0
35 — 39 ".....	2.7	3.3	2.3	2.4	1.8	1.9	1.7	1.5
40 — 44 ".....	3.3	3.1	2.7	2.9	2.5	2.3	2.3	1.9
45 — 49 ".....	4.1	3.6	3.8	3.6	3.4	3.0	3.6	2.8
50 — 54 ".....	5.0	4.2	5.3	4.4	4.9	3.8	5.1	3.8
55 — 59 ".....	5.4	4.7	6.9	5.6	6.6	5.2	6.6	4.7
60 — 64 ".....	6.3	5.9	8.3	6.9	9.0	7.2	8.5	6.4
65 — 69 ".....	7.5	7.0	9.5	8.7	11.2	9.4	10.3	9.1
70 — 74 ".....	8.6	8.5	10.2	9.8	12.2	11.9	12.8	12.1
75 — 79 ".....	7.7	8.4	10.1	10.7	11.5	12.7	13.3	14.2
80 — 84 ".....	5.7	6.7	7.9	9.7	8.7	11.3	10.4	13.5
85 years or over.....	4.5	6.2	6.0	8.9	7.5	11.6	8.9	15.1
Totals, All Ages.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RATES PER 1,000 POPULATION								
Under 1 year.....	94.4	74.4	67.0	51.9	42.7	34.0	30.5	23.7
1 — 4 years.....	6.8	6.1	4.7	4.0	2.1	1.8	1.3	1.0
5 — 9 ".....	2.2	1.7	1.7	1.3	1.0	0.7	0.6	0.4
10 — 14 ".....	1.5	1.5	1.4	1.0	0.8	0.5	0.6	0.3
15 — 19 ".....	2.5	2.2	2.0	1.5	1.4	0.9	1.2	0.5
20 — 24 ".....	3.2	3.2	2.6	2.0	1.9	1.0	1.7	0.6
25 — 29 ".....	3.4	3.8	2.7	2.5	1.8	1.1	1.5	0.7
30 — 34 ".....	3.5	4.2	2.8	2.8	2.1	1.5	1.6	0.9
35 — 39 ".....	4.2	4.8	3.8	3.4	2.5	2.0	2.3	1.4
40 — 44 ".....	5.4	5.0	5.0	4.5	3.9	3.0	3.4	2.0
45 — 49 ".....	7.2	6.6	7.3	6.0	6.4	4.5	5.8	3.2
50 — 54 ".....	10.7	9.0	10.6	8.1	10.4	6.5	9.6	5.3
55 — 59 ".....	15.4	13.4	16.0	12.3	16.2	10.2	15.2	8.0
60 — 64 ".....	22.9	20.7	24.2	18.5	24.5	16.1	24.0	12.8
65 — 69 ".....	35.2	30.3	37.3	30.4	35.1	24.9	35.7	21.4
70 — 74 ".....	55.0	49.1	58.5	47.0	54.5	41.6	54.0	34.2
75 — 79 ".....	87.4	82.9	95.7	79.7	87.6	73.3	81.8	59.2
80 — 84 ".....	134.1	127.1	147.6	131.2	135.5	120.7	125.1	101.2
85 years or over.....	228.1	212.6	241.9	229.3	235.1	212.0	208.9	192.2
Totals, All Ages.....	10.5	9.6	10.8	9.1	10.1	7.8	9.0	6.5
Average age at death.....	43.1	44.8	51.5	53.4	56.3	58.7	59.7	63.1

¹ Excludes the Yukon and Northwest Territories.

Deaths in Urban Centres.—Table 2 on pp. 222-226 shows the number of deaths in 1961 for urban centres of 10,000 population or over. Without a knowledge of the age composition of each centre it is difficult to compare rates for various centres. The migration of young people from rural areas to certain urban centres and of older people to other centres creates a favourable situation for a low or high rate as the case may be. However, despite differences in the age factor, some urban areas have very low death rates compared with other centres of the same size and with other areas in the same province.

Causes of Death.—Table 15 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. About 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases—tuberculosis, pneumonia and influenza—and nephritis.

MAJOR CAUSES OF DEATH



* INCLUDES: DISEASES OF HEART (INCL. RHEUMATIC FEVER) AND ARTERIES, INTRACRANIAL LESIONS, CHRONIC NEPHRITIS.

The rise in the average age at death has already been noted (p. 238). Deaths from causes that mainly affect children and young adults have declined. Diphtheria, for example, has been almost wiped out—in fact there were only 12 deaths from diphtheria during the years 1960 and 1961 and not a single one in 1959—and tuberculosis has been greatly reduced. On the other hand, the aging of the population has increased the proportion of deaths from certain causes that affect older people. Thus, cancer and diseases of the cardiovascular-renal systems now account for a substantially larger proportion of all deaths than formerly.

These trends indicate the remarkable success that has attended the attack by health authorities on the infective and contagious diseases which in the past have constituted such a great hazard in the early and young adult years of life. They have served similarly to emphasize the emergence of the chronic and degenerative conditions of later life as the targets toward which the public health programs of the future will be directed. In effect, Canada has shared the experience of most western nations in exchanging a high mortality in younger life for high morbidity in older age groups.

The chart on p. 240 shows death rates for the major cause groups from 1936-61.

15.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1960 and 1961

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1960	1961	1960 ¹	1961
B 1	001-008	Tuberculosis of respiratory system.....	725	678	4.1	3.7
B 2	010-019	Tuberculosis, other forms.....	98	91	0.5	0.5
B 3	020-029	Syphilis and its sequelae.....	172	160	1.0	0.9
B 4	040	Typhoid fever.....	4	2	--	--
B 5	043	Cholera.....	—	—	—	—
B 6	045-048	Dysentery, all forms.....	32	32	0.2	0.2
B 7	050, 051	Scarlet fever and streptococcal sore throat..	22	13	0.1	0.1
B 8	055	Diphtheria.....	7	5	--	--
B 9	056	Whooping cough.....	71	36	0.4	0.2
B 10	057	Meningococcal infections.....	63	24	0.4	0.1
B 11	058	Plague.....	—	—	—	—
B 12	080	Acute poliomyelitis.....	83	11	0.5	0.1
B 13	084	Smallpox.....	—	—	—	—
B 14	085	Measles.....	53	96	0.3	0.5
B 15	100-108	Typhus and other rickettsial diseases.....	—	—	—	—
B 16	110-117	Malaria.....	2	—	--	--
	030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 086-096, 120-138	All other diseases classified as infective and parasitic.....	371	430	2.1	2.4
B 17						
B 18	140-205	Cancer (all malignant neoplasms).....	23,181	23,650	129.7	129.7
	(201)	Cancer.....	21,890	22,524	122.5	122.4
	(204)	Hodgkin's disease.....	270	282	1.5	1.5
B 19	210-239	Leukemia and aleukemia.....	1,021	1,044	5.7	5.7
B 20	240	Benign and unspecified neoplasms.....	301	311	1.7	1.7
B 21	290-293	Diabetes mellitus.....	2,081	2,164	11.6	11.9
B 22	330-334	Anæmia.....	320	361	1.8	2.0
B 23	340	Vascular lesions affecting central nervous system.....	15,428	15,299	86.3	83.9
B 24	400-402	Non-meningococcal meningitis.....	177	215	1.0	1.2
B 25	410-416	Rheumatic fever.....	53	64	0.3	0.4
B 26	420-422	Chronic rheumatic heart disease.....	1,394	1,404	7.8	8.0
		Arteriosclerotic and degenerative heart disease.....	42,439	43,233	237.5	237.0
B 27	430-434	Other diseases of heart.....	2,129	2,095	11.9	11.5
B 28	440-443	Hypertension with heart disease.....	3,222	3,179	18.0	17.4
B 29	444-447	Hypertension without mention of heart.....	985	907	5.5	5.0
B 30	480-483	Influenza.....	547	537	3.1	2.9
B 31	490-493	Pneumonia.....	5,360	5,072	30.0	27.8
B 32	500-502	Bronchitis.....	862	839	4.8	4.6

¹ Many rates have been revised since the publication of the 1962 Year Book; see headnote to Table 1.

15.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1960 and 1961—concluded

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1960	1961	1960 ¹	1961
B33	540, 541	Ulcer of stomach and duodenum.....	921	846	5.2	4.6
B34	550-553	Appendicitis.....	187	167	1.0	0.9
B35	560, 561, 570	Intestinal obstruction and hernia.....	890	929	5.0	5.1
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhoea of the newborn.....	974	907	5.5	5.0
B37	581	Cirrhosis of liver.....	1,097	1,083	6.1	5.9
B38	590-594	Nephritis and nephrosis.....	1,558	1,481	8.7	8.1
B39	610	Hyperplasia of prostate.....	485	510	5.4 ²	5.5 ²
B40	640-652, 660, 670-689	Complications of pregnancy, childbirth and the puerperium.....	215	219	44.9 ²	46.0 ²
B41	750-759	Congenital malformations.....	2,696	2,822	15.1	15.5
B42	760-762	Birth injuries, postnatal asphyxia and atelectasis.....	2,787	2,766	15.6	15.2
B43	763-768	Infections of the newborn.....	582	539	3.3	3.0
B44	769-776	Other diseases peculiar to early infancy and immaturity (unqualified).....	3,716	3,854	20.8	21.1
B45	780-795	Senility without mention of psychosis, ill-defined and unknown causes.....	1,357	1,220	7.6	6.7
B46	Residual	All other diseases.....	11,040	11,445	61.8	62.8
BE47	E810-E835	Motor vehicle accidents.....	3,700	3,882	20.7	21.3
BE48	E800-E802 E840-E962	All other accidents.....	5,703	5,758	31.9	31.6
BE49	E963, E970-E979	Suicide.....	1,350	1,366	7.6	7.5
BE50	E964, E965 E980-E999	Homicide and operations of war.....	253	223	1.4	1.2
Totals, All Causes.....			139,693	140,935	781.7	773.0

¹ Many rates have been revised since the publication of the 1962 Year Book; see headnote to Table 1.
² Per 100,000 males.

² Per 100,000 live births.

Subsection 2.—Infant Mortality

Table 1, pp. 220-221, and Table 16 show the striking improvement that has taken place in the rate of infant mortality during the past twenty years. Although 68,307 of the 2,372,737 children born in the five years 1957-61 died before reaching their first birthday, 154,730 others lived who *would have died* at the rate prevailing in the period 1926-30. This improvement is attributed to many factors—the higher proportion of births taking place in hospital or under proper prenatal and postnatal care, better supervision of water supplies, improved sanitation, pasteurization of milk, the use of antibiotics, improved paediatric, obstetrical and hospital nursing services, improved home environment as a result of higher living standards and, in recent years, the generally lower age of mothers.

The variations that exist in infant mortality rates from province to province and from one locality to another may be explained by differences in the extent to which these factors apply provincially or locally.

Table 16 shows that mortality among male infants is 25 to 30 p.c. higher than that among female infants for Canada as a whole, with wider variations for the individual provinces. For the country as a whole, in 1961, out of every 1,000 infant boys born alive, 30 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 24 died within one year. As already pointed out, there are on the average 1,057 males born to every 1,000 females but, because male infant mortality is higher, the excess of males is reduced greatly by the end of the first year. For example, in 1959-61 there were 736,505 male children born compared with 697,021 female children, an excess of 39,484 or 5.7 p.c.;

during the same period, 22,846 male children died during their first year compared with 16,766 female children so that the excess of males at one year of age was reduced to 33,404 or under 5 p.c.

16.—Distribution of Infant Deaths by Province and Sex, 1941-61

Province and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Province or Territory and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.				No.	No.		
Newfoundland.....1951	361	276	60	48	Saskatchewan.....1941	531	415	56	46
1959	345	231	45	32	1951	353	323	32	30
1960	312	233	40	32	1959	376	250	30	21
1961	335	253	42	33	1960	381	256	31	22
					1961	373	245	30	21
P. E. Island.....1941	102	61	95	63	Alberta.....1941	506	373	57	44
1951	60	30	44	23	1951	531	358	39	27
1959	43	42	31	31	1959	554	368	28	20
1960	55	33	40	24	1960	601	421	30	22
1961	55	38	37	28	1961	612	432	31	23
Nova Scotia.....1941	545	363	77	53	British Columbia..1941	316	236	41	32
1951	344	250	39	30	1951	487	352	34	26
1959	332	259	34	28	1959	568	426	28	22
1960	332	233	34	25	1960	542	404	26	21
1961	309	229	31	24	1961	534	411	27	22
New Brunswick....1941	515	421	83	69	Yukon Territory..1951	10	9	58	53
1951	472	363	58	46	1959	9	5	34	18
1959	315	221	37	28	1960	16	10	57	39
1960	280	208	33	26	1961	13	10	46	36
1961	248	186	29	23					
Quebec.....1941	3,916	2,854	85	66	Northwest Territories.....1951	43	27	136	81
1951	3,335	2,485	54	42	1959	72	56	140	118
1959	2,740	1,995	38	29	1960	89	69	157	131
1960	2,406	1,753	34	26	1961	73	51	128	93
1961	2,464	1,855	35	28					
Ontario.....1941	1,910	1,384	51	40	Canada.....1941 ¹	8,788	6,448	67	52
1951	2,010	1,535	34	28	1951	8,375	6,298	43	34
1959	2,110	1,663	26	22	1959	7,827	5,768	32	25
1960	2,152	1,593	26	21	1960	7,572	5,505	31	24
1961	2,090	1,536	26	20	1961	7,447	5,493	30	24
Manitoba.....1941	447	341	59	47					
1951	369	289	36	30					
1959	363	252	31	23					
1960	406	292	34	26					
1961	341	247	29	22					

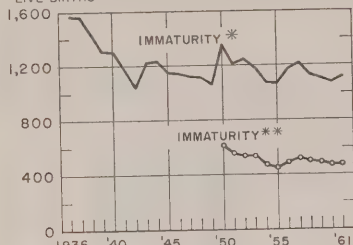
¹ Excludes Newfoundland and the Yukon and Northwest Territories.

Age at Death.—In 1961 the ages of the 12,940 infants who died within a year of birth were by no means evenly spread over the twelve-month span. In fact, 11,824 or 91 p.c. of the infants were less than six months old and 8,564 or 66 p.c. were less than one month old. There was a sharp drop to 1,071 in the second month with gradual reductions thereafter to the eleventh month. Of the 8,564 deaths during the first month, 7,523 occurred in the first week of life and no less than 4,797 took place in the first day.

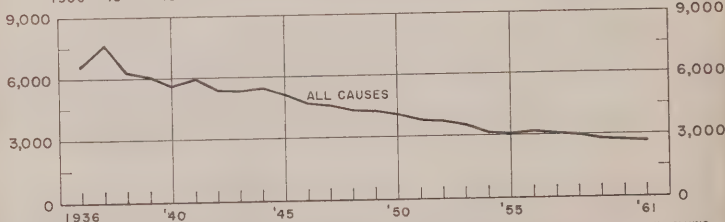
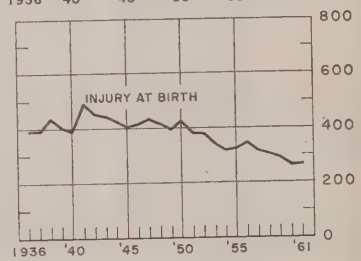
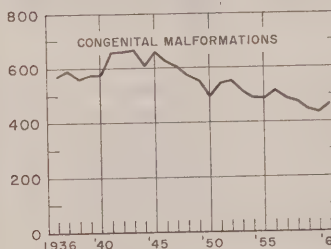
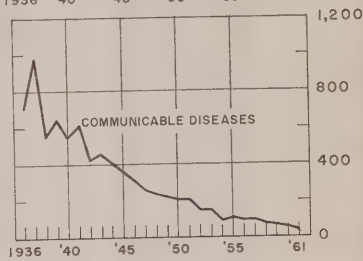
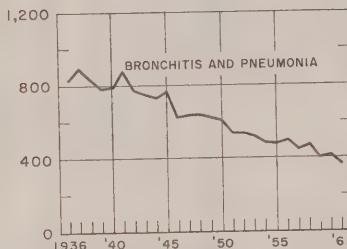
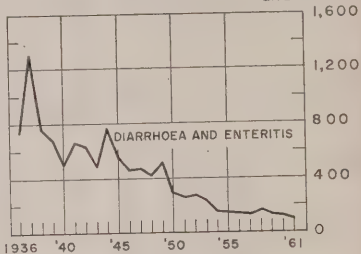
Causes of Infant Deaths.—In 1961 more than two thirds of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 2,284 and was an added complication in 3,007 others. Congenital malformations accounted for 2,192 fatalities. Pneumonia took the lives of 1,683 infants. Postnatal asphyxia accounted for 1,502 deaths and injury at birth for 1,264.

LEADING CAUSES OF INFANT DEATHS

RATE PER 100,000
LIVE BIRTHS



RATE PER 100,000
LIVE BIRTHS



* DUE TO CHANGES IN CLASSIFICATION, NOT STRICTLY COMPARABLE OVER THE PERIOD; INCLUDES ALL DEATHS INVOLVING IMMATURITY EITHER AS THE UNDERLYING CAUSE OR AS A COMPLICATION.

** INCLUDES CATEGORIES 774-776, INTERNATIONAL STATISTICAL CLASSIFICATION (6th. & 7th. Rev.) WHERE IMMATURITY REPORTED ALONE AS UNDERLYING CAUSE.

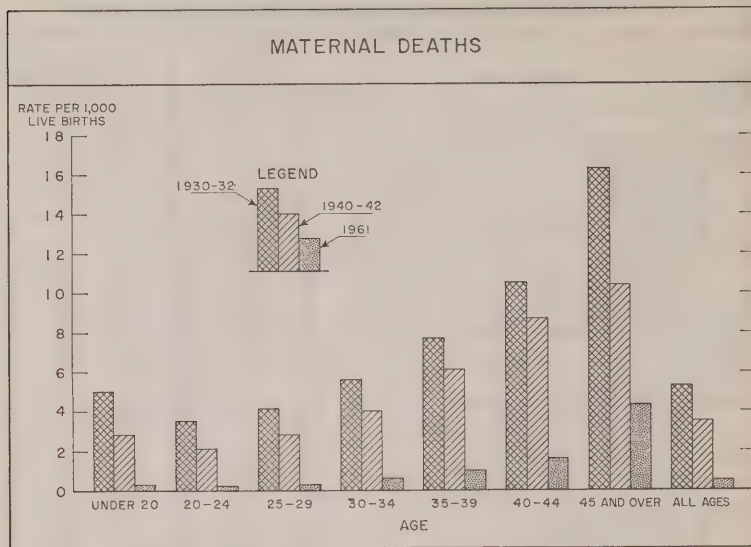
17.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1959-61

International List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1959	1960	1961	1959	1960	1961
001-019	Tuberculosis.....	18	7	8	4	1	2
020-029	Syphilis.....	1	—	1	—	—	—
045-048	Dysentery.....	9	23	14	2	5	3
050	Scarlet fever.....	2	1	1	—	—	—
052	Erysipelas.....	2	—	1	—	—	—
055	Diphtheria.....	—	—	—	—	—	—
056	Whooping cough.....	39	63	24	8	13	5
057	Meningococcal infections.....	25	35	8	5	7	2
085	Measles.....	28	27	30	6	6	6
140-239	Neoplasms.....	53	44	42	11	9	9
273	Diseases of thymus gland.....	29	23	13	6	5	3
325	Mental deficiency.....	65	52	75	14	11	16
340	Meningitis (non-meningococcal).....	79	89	109	16	19	23
391, 392	Otitis media.....	89	86	59	19	18	12
470-475	Acute upper respiratory infections.....	59	57	81	12	12	17
480-483	Influenza.....	175	119	108	37	25	23
490-493	Pneumonia (4 weeks and over).....	1,389	1,415	1,273	290	296	268
500-502	Bronchitis.....	105	105	74	22	22	16
543	Gastritis and duodenitis.....	2	5	4	—	1	—
560-570	Hernia and intestinal obstruction.....	102	97	107	21	20	22
571	Gastro-enteritis and colitis.....	490	483	400	102	101	84
572	Chronic enteritis, and ulcerative colitis.....	1	5	2	—	—	—
750-759	Congenital malformations.....	2,149	2,076	2,192	448	434	461
760, 761	Injury at birth.....	1,400	1,265	1,264	292	294	266
762	Postnatal asphyxia and atelectasis.....	1,535	1,522	1,502	320	318	316
763	Pneumonia of newborn (under 4 weeks).....	454	454	410	95	95	86
764	Diarrhoea of newborn (under 4 weeks).....	126	80	86	26	17	18
765-768	Other infections of the newborn.....	43	48	42	9	10	9
769	Antenatal toxæmia.....	121	91	120	25	19	25
770	Erythroblastosis.....	377	343	325	79	72	68
771	Hæmorrhagic disease of newborn.....	107	93	97	22	19	20
772	Nutritional maladjustment.....	71	48	53	15	10	11
773	Ill-defined diseases peculiar to early infancy.....	849	875	972	177	183	204
774-776	Immaturity.....	2,369	2,261	2,284	494	472	480
795	Ill-defined and unknown causes.....	145	96	80	30	20	17
E810-E825	Motor vehicle accidents.....	24	14	24	5	3	5
E900-E904	Accidental falls.....	10	17	14	2	4	3
E916	Accidents caused by fire.....	29	24	23	6	5	6
E921, E922	Inhalation and ingestion of food or other object.....	303	306	317	63	64	67
E924, E925	Accidental mechanical suffocation.....	159	145	178	33	30	37
	Other accidental and violent deaths.....	42	51	64	9	11	13
	Other specified causes.....	520	532	458	108	111	96
	Totals, All Causes.....	13,595	13,077	12,940	2,837	2,733	2,720

Infant Mortality in Urban Centres.—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 222-226, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated.

Subsection 3.—Maternal Mortality

As indicated in Table 1, pp. 220-221, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades. Although the number of births has been much greater in recent years, the number of maternal deaths declined steadily from 1940 (when there were 978 deaths and a rate of 40 deaths for every 10,000 births delivered alive) to 255 in 1957; the slightly higher figure of 263 in both 1958 and 1959 was followed by all-time lows of 215 in 1960 and 219 in 1961. Since 1945 the rate of maternal mortality has been less than 20 per 10,000 live births, since 1951 it has been under 10, and in both 1960 and 1961 it was under five. Despite this improvement, Canada's maternal death rate (4.6 in 1961) is higher than the rates for several other countries such as Sweden (3.7), England and Wales (3.4) and the United States (3.2). Mortality among unmarried mothers is higher than among married mothers.



Age at Death.—Table 18 shows the distribution of maternal deaths by age group and average age at death; the latter is about four years higher than the average age of all mothers at the time of childbirth. Until recent years, the risk of mortality at childbirth was directly related to the age of the mother—in other words, for all mothers of over 20 years the rate rose with increasing age. While death rates for all age groups of mothers have been declining, there have been rather significant changes in the rates. Formerly, the rate for mothers in the age group 30-34 was twice or three times as high as the rate for the 20-24 group, but recently mortality rates for the four age groups of mothers under 35 years of age have not been far apart, although after age 35 a sharp rise occurs.

18.—Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1959-61
(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 10,000 Live Births		
	1959		1960		1961		1959	1960	1961
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years.....	12	4.8	11	5.5	10	4.8	3.2	2.8	2.5
20 — 24 ".....	41	16.3	28	14.1	26	12.5	3.1	2.1	1.9
25 — 29 ".....	51	20.3	33	16.6	36	17.3	3.8	2.5	2.8
30 — 34 ".....	54	21.5	43	21.6	56	26.9	5.9	4.8	6.3
35 — 39 ".....	63	25.1	43	21.6	50	24.0	12.0	8.3	9.8
40 — 44 ".....	25	10.0	33	16.6	25	12.0	16.6	21.6	16.0
45 — 49 ".....	4	1.6	8	4.0	5	2.4	32.4	71.0	43.6
50 years or over.....	1	0.4	—	—	—	—	—	—	—
Totals, All Ages.....	251	100.0	199	100.0	208	100.0	5.4	4.3	4.5
Average age at death.....	31.8		32.8		32.5		...	...	...

Causes of Maternal Deaths.—Table 19 shows the main causes of maternal deaths during the years 1959-61. Until a decade or so ago, sepsis and toxæmia were by far the most important causes of death of mothers at childbirth. The danger of death from sepsis and other infection has been sharply reduced over the past 15 to 20 years through the use of antibiotics and probably also through increased use of medical services. On the other hand, the number of deaths caused by toxæmia arising during pregnancy and other complications of both pregnancy and delivery represent continuing problems. Hæmorrhage during pregnancy or delivery, which has been another important cause of mortality among mothers, has shown some reduction in recent years.

Of the 219 maternal deaths in 1961, 53 resulted from complication arising during pregnancy, more than half of these from some type of toxæmia; 96 resulted from a complication of delivery, 44 from a post-delivery complication and 26 from abortive delivery.

19.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1959-61

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1959	1960	1961	1959	1960	1961
	Complications of Pregnancy	82	69	53	17	14	11
640, 641	Infections of the genito-urinary tract during pregnancy.....	2	1	1	--	--	--
642	Toxæmias of pregnancy.....	42	36	29	9	8	6
643	Placenta prævia noted before delivery.....	1	3	--	--	1	--
644	Other hæmorrhage of pregnancy.....	4	3	3	1	1	1
645	Ectopic pregnancy.....	9	7	5	2	1	1
646-649	Other complications of pregnancy.....	24	19	15	5	4	3
	Abortion	41	24	26	9	5	5
650, 652	Abortion without mention of sepsis.....	17	6	10	4	1	2
651	Abortion with sepsis.....	24	18	16	5	4	3
	Complications of Delivery	95	83	96	20	17	20
660	Delivery (without complication).....	1	1	--	--	--	--
670	Delivery complicated by placenta prævia or antepartum hæmorrhage.....	25	14	18	5	3	4
671	Delivery complicated by retained placenta.....	6	4	3	1	1	1
672	Delivery complicated by other postpartum hæmorrhage.....	24	20	20	5	4	4
673, 674	Delivery complicated by abnormality of bony pelvis or malposition of foetus.....	7	5	8	1	1	2
675	Delivery complicated by prolonged labour of other origin.....	6	6	3	1	1	1
676, 677	Delivery with laceration or other trauma.....	14	18	27	3	4	6
678	Delivery with other complications of childbirth.....	12	15	17	3	3	4
	Complications of the Puerperium	45	39	44	9	8	9
680	Puerperal urinary infection without other sepsis.....	11	8	13	2	2	3
681	Sepsis of childbirth and the puerperium.....	11	8	13	2	2	3
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism.....	19	15	13	4	3	3
685, 686	Puerperal eclampsia and toxæmia.....	5	5	3	1	1	1
687-689	Other.....	10	11	15	2	2	3
	Totals, All Puerperal Causes	263	215	219	55	45	46

Section 4.—Natural Increase*

The excess of births over deaths, commonly referred to as natural increase, is a very important factor in the growth of a population. Although, as previously stated, the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of

* For international comparisons, see Section 7, pp. 256-257.

natural increase in the early Canadian population may be learned from the estimates shown at the beginning of Sections 2 and 3, which resulted in the following natural increase rates:—

<i>Intercensal Period</i>	<i>Estimated Average Annual Natural Increase Rate (per 1,000 Population)</i>	<i>Intercensal Period</i>	<i>Estimated Average Annual Natural Increase Rate (per 1,000 Population)</i>
1851-61.....	23	1891-1901.....	14
1861-71.....	19	1901-11.....	18
1871-81.....	18	1911-21.....	16
1881-91.....	16		

Because of the combination of high birth rates and declining death rates—despite the fact that death rates were still relatively high—the annual rate of natural increase during the late 1800's and early 1900's varied between 14 and 23; in other terms, the population increased at the rate of 1.5 p.c. to 2.5 p.c. each year by natural increase alone, regardless of any increase attributable to immigration. During the 1920's and early 1930's the birth rate declined more than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. But higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Although after that year there was a slight drop because of the declining birth rate, the natural increase rate stood at 19.0 in 1960 and 18.4 in 1961.

Table 20 shows the rates of natural increase in the provinces and for each sex separately for the 20 years 1941-61. The high rates in the Prairie Provinces, especially Alberta, are partly accounted for by their relatively younger populations and consequent low death rates. High birth rates and declining death rates have given Newfoundland, Alberta, Quebec, New Brunswick and Saskatchewan the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

20.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-61

NOTE.—Adjustments in intercensal populations on the basis of 1961 Census figures necessitated the revision of many of the 1959 and 1960 natural increase rates that appeared in the 1962 Year Book.

Province and Year	Excess of Births Over Deaths	Rate per 1,000 Popu- lation	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Newfoundland.....Av. 1951-55	10,175	26.5	5,066	25.7	5,108	27.4
Av. 1956-60	11,820	27.4	5,897	26.5	5,922	28.2
1959	11,647	26.4	5,777	25.5	5,870	27.4
1960	12,168	27.2	6,130	26.6	6,028	27.7
1961	12,553	27.5	6,350	27.0	6,203	27.8
Prince Edward Island.....Av. 1941-45	1,216	13.2	608	12.7	608	13.8
Av. 1946-50	1,947	20.7	972	20.0	975	21.3
Av. 1951-55	1,797	18.0	890	17.5	907	18.5
Av. 1956-60	1,721	17.1	805	15.8	916	18.5
1959	1,713	16.9	842	16.5	871	17.5
1960	1,773	17.2	805	15.4	968	19.1
1961	1,860	17.8	825	17.3	935	18.2
Nova Scotia.....Av. 1941-45	8,820	14.7	4,343	14.1	4,477	15.2
Av. 1946-50	11,952	19.2	5,902	18.6	6,050	19.7
Av. 1951-55	12,444	18.7	6,126	18.2	6,318	19.3
Av. 1956-60	13,035	18.4	6,344	17.6	6,691	19.2
1959	12,667	17.6	6,067	16.6	6,600	18.7
1960	13,024	17.9	6,255	16.9	6,769	19.0
1961	13,247	18.0	6,435	17.2	6,812	18.8
New Brunswick.....Av. 1941-45	7,987	17.3	3,973	16.8	4,014	17.8
Av. 1946-50	11,992	24.2	6,011	23.8	5,982	24.5
Av. 1951-55	11,920	22.4	5,859	21.9	6,062	22.9
Av. 1956-60	11,927	20.9	5,948	20.6	5,980	21.1
1959	11,739	20.1	5,799	19.7	5,940	20.6

20.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941-61—concluded

Province or Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
New Brunswick—concluded.....1960	11,671	19.8	5,776	19.4	5,895	20.3
1961	11,895	19.8	5,844	19.3	6,051	20.5
Quebec.....Av. 1941-45	63,633	18.5	32,012	18.5	31,621	18.4
Av. 1946-50	81,773	21.5	41,001	21.6	40,772	21.5
Av. 1951-55	94,254	22.0	46,897	21.9	47,357	22.1
Av. 1956-60	104,130	21.3	51,517	21.0	52,613	21.5
1959	105,993	21.1	52,416	20.8	53,577	21.4
1960	102,721	20.0	50,604	19.7	52,117	20.3
1961	100,130	19.1	49,741	18.9	50,389	19.2
Ontario.....Av. 1941-45	38,000	9.7	18,456	9.3	19,544	10.1
Av. 1946-50	62,947	14.7	30,699	14.2	32,248	15.2
Av. 1951-55	84,146	17.1	41,079	16.5	43,067	17.6
Av. 1956-60	103,257	17.9	50,331	17.3	52,926	18.4
1959	106,524	17.8	52,053	17.3	54,471	18.4
1960	107,761	17.7	52,552	17.1	55,209	18.2
1961	106,666	17.1	51,538	16.4	55,128	17.8
Manitoba.....Av. 1941-45	9,198	12.7	4,349	11.6	4,849	13.9
Av. 1946-50	12,627	16.9	6,012	15.7	6,615	18.1
Av. 1951-55	14,546	18.0	6,866	16.7	7,680	19.3
Av. 1956-60	15,115	17.3	7,118	16.0	7,998	18.6
1959	15,380	17.3	7,298	16.1	8,082	18.5
1960	15,766	17.4	7,498	16.3	8,268	18.6
1961	15,919	17.3	7,445	15.9	8,474	18.7
Saskatchewan.....Av. 1941-45	12,007	14.1	5,666	12.5	6,311	16.0
Av. 1946-50	15,434	18.5	7,302	16.6	8,132	20.7
Av. 1951-55	17,007	19.9	8,038	18.0	8,969	21.8
Av. 1956-60	17,293	19.4	8,115	17.5	9,179	21.4
1959	17,316	19.1	8,036	17.1	9,280	21.3
1960	17,220	18.8	8,012	16.9	9,208	20.9
1961	16,887	18.2	7,766	16.2	9,121	20.5
Alberta.....Av. 1941-45	12,490	15.7	5,823	13.7	6,668	18.0
Av. 1946-50	17,476	20.4	8,295	18.4	9,181	22.6
Av. 1951-55	23,560	23.2	11,271	21.2	12,289	25.4
Av. 1956-60	28,591	23.7	13,719	21.9	14,872	25.7
1959	29,599	23.7	14,180	21.9	15,419	25.7
1960	30,121	23.3	14,446	21.6	15,675	25.2
1961	30,051	22.5	14,194	20.6	15,857	24.7
British Columbia.....Av. 1941-45	8,337	9.3	3,241	6.9	5,096	12.0
Av. 1946-50	14,867	13.8	6,368	11.4	8,499	16.4
Av. 1951-55	19,114	15.3	8,474	13.2	10,640	17.5
Av. 1956-60	24,950	16.5	11,248	14.5	13,702	18.5
1959	25,635	16.4	11,661	14.5	13,974	18.3
1960	25,420	15.8	11,562	14.1	13,858	17.7
1961	24,188	14.9	10,829	13.1	13,359	16.7
Yukon Territory.....Av. 1951-55	323	33.6	144	25.2	179	45.6
Av. 1956-60	414	32.3	195	27.0	218	38.9
1959	448	34.5	191	26.2	257	45.1
1960	441	31.5	207	26.2	234	38.4
1961	464	31.7	218	26.7	246	38.1
Northwest Territories.....Av. 1951-55	382	23.0	196	20.8	186	25.9
Av. 1956-60	633	31.4	306	26.3	327	37.8
1959	701	33.3	342	28.5	359	39.9
1960	782	35.5	386	31.1	396	41.3
1961	855	37.2	409	31.9	446	43.8
Canada ¹.....Av. 1941-45	161,688	13.7	78,501	13.0	83,187	14.5
Av. 1946-50	234,999	18.1	114,560	17.4	120,439	18.9
Av. 1951-55	289,668	19.5	140,906	18.7	148,762	20.3
Av. 1956-60	332,886	19.6	161,544	18.7	171,342	20.4
1959	339,362	19.4	164,662	18.6	174,700	20.2
1960	338,858	19.0	164,233	18.2	174,625	19.8
1961	334,715	18.4	161,694	17.5	173,021	19.2

¹Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this in itself tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are greatly reduced.

Natural Increase in Urban Centres.—The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; the figures are presented in Table 2, pp. 222-226.

Section 5.—Marriages and Divorces

Subsection 1.—Marriages*

In 1961 Canada's crude marriage rate was 7.0 per 1,000 population, the lowest in over 20 years. Provincial rates varied from 6.0 per 1,000 population for Prince Edward Island to 7.9 for Alberta.

Table 21 provides a summary of the number of marriages and the marriage rates per 1,000 population for Canada and the provinces for the years 1941, 1951 and the three consecutive years 1959-61, and percentages of brides and bridegrooms, for the same years according to place of birth. For the country as a whole, over 82 p.c. of the grooms of 1961 were born in Canada and almost 68 p.c. in the province in which they were married; almost 86 p.c. of the brides were born in Canada and over 74 p.c. in the province in which they were married. However, as would be expected because of heavy immigration of young persons in the postwar years, an increasing number of marriages are of persons born outside the country. For example, 17.9 p.c. of the grooms married in 1961 were born outside Canada compared with 11.7 p.c. in 1941; for brides the proportions were 14.1 p.c. and 8.4 p.c., respectively. However, there are wide variations in this pattern as between provinces; in the older Atlantic Provinces and Quebec there is a greater tendency than in the other provinces to marry native Canadians. In these areas both partners in a marriage are often born in the same province.

* For international comparisons, see Section 7, pp. 256-257.

21.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1959-61

Province and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland.....	1951 2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
	1959 2,893	6.6	86.4	96.5	3.3	1.4	10.3	2.1
	1960 3,104	6.9	86.2	96.4	3.3	1.9	9.5	1.7
	1961 3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
Prince Edward Island.....	1941 673	7.1	78.8	86.6	15.0	9.4	6.2	4.0
	1951 583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
	1959 639	6.3	84.4	92.0	11.9	5.9	3.8	2.0
	1960 690	6.7	79.6	91.2	14.8	6.4	5.7	2.5
	1961 624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
Nova Scotia.....	1941 6,506	11.4	73.2	83.8	16.8	9.5	10.0	6.7
	1951 5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
	1959 5,310	7.4	74.5	87.2	19.2	9.4	6.3	3.4
	1960 5,250	7.2	76.2	87.8	17.9	8.8	5.9	3.4
	1961 5,292	7.2	75.2	87.8	18.8	8.8	6.0	3.4

21.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1959-61—concluded

Province or Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
New Brunswick.....1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.9
1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
1959	4,310	7.4	73.8	84.7	14.1	7.9	12.2	7.4
1960	4,430	7.5	74.4	85.9	14.8	8.1	10.8	6.0
1961	4,604	7.5	75.4	86.3	14.9	7.9	9.7	5.8
Quebec.....1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4.8
1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
1959	37,124	7.4	82.8	86.6	5.7	4.4	11.5	9.0
1960	36,211	7.0	82.9	86.9	5.7	4.6	11.4	8.6
1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
Ontario.....1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
1951	45,198	9.8	85.9	72.4	14.6	12.2	19.5	15.4
1959	46,598	7.8	58.9	64.8	13.2	11.1	27.8	24.1
1960	45,855	7.5	60.1	66.1	13.3	11.2	26.6	22.7
1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
Manitoba.....1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
1959	6,661	7.5	65.1	75.1	17.8	12.7	17.0	12.3
1960	6,606	7.3	66.4	74.9	17.9	13.4	15.7	11.8
1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
Saskatchewan.....1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
1959	6,388	7.0	78.2	86.2	12.2	7.0	9.6	6.8
1960	6,209	6.8	81.7	86.6	8.7	7.6	9.6	5.9
1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
Alberta.....1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
1959	10,402	8.3	53.3	62.4	25.2	20.7	21.5	16.9
1960	10,482	8.1	54.3	62.2	25.4	20.9	20.3	16.8
1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
British Columbia.....1941	9,769	11.0	35.9	43.5	35.6	37.1	28.5	19.4
1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
1959	11,910	7.6	33.3	42.3	36.9	33.5	29.8	24.2
1960	11,203	7.0	34.8	43.5	37.0	33.3	28.2	23.2
1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
Yukon Territory.....1959	109	8.4	16.5	26.6	61.5	50.5	22.0	22.9
1960	107	7.6	10.3	22.4	62.6	53.3	27.1	24.3
1961	128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
Northwest Territories.....1959	130	6.2	57.7	66.9	24.6	24.6	17.7	8.5
1960	191	8.7	64.9	74.9	28.8	19.4	6.3	5.8
1961	145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
Canada ¹.....1941	121,842	10.6	76.8	81.5	11.4	10.1	11.7	8.4
1951	128,250	9.2	70.5	76.5	15.1	12.8	14.5	10.6
1959	132,474	7.6	65.9	72.6	14.5	11.5	19.6	15.9
1960	130,338	7.3	67.0	73.4	14.3	11.6	18.7	15.0
1961	128,475	7.0	67.9	74.2	14.3	11.7	17.9	14.1

¹ Newfoundland included from 1951 and the Yukon and Northwest Territories from 1959.

Age and Marital Status of Brides and Bridegrooms.—Table 22 shows that over 91 p.c. of the marriages in 1961 were between persons who had not been married previously; 5.1 p.c. of the brides and 4.5 p.c. of the bridegrooms had been widowed, and almost 4 p.c. of the marriages were of divorced persons. The average age at marriage of bachelors was just under 26 years and that of spinsters just under 23 years. The average age of widowers and widows at time of remarriage was slightly more than double that of

bachelors and spinsters. Of the spinsters married in 1961, 92 p.c. were under 30 years of age, 35 p.c. were under 20 years and 46 p.c. were between 20 and 25. Over 84 p.c. of the bachelors were under 30 years of age, 7 p.c. of them under 20 and over 51 p.c. from 20 to 24 years of age.

In recent years, couples have been marrying younger than they did a generation ago. Since 1940 the average age of men at the time of their first marriage has dropped from 28 years to less than 26; that of girls from 24 years, 5 months to less than 23 years.

22.—Brides and Bridegrooms, by Age and Marital Status, 1961

Age Group	BRIDES							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 20 years.....	40,614	15	26	40,655	34.7	0.2	0.5	31.6
20 — 24 ".....	53,827	177	595	54,599	46.0	2.7	12.1	42.5
25 — 29 ".....	13,278	309	1,119	14,706	11.3	4.8	22.7	11.4
30 — 34 ".....	4,680	496	1,092	6,268	4.0	7.6	22.1	4.9
35 — 39 ".....	2,147	634	826	3,607	1.8	9.8	16.7	2.8
40 — 44 ".....	1,058	766	548	2,372	0.9	11.8	11.1	1.8
45 — 49 ".....	683	918	396	1,997	0.6	14.1	8.0	1.6
50 — 54 ".....	341	800	192	1,333	0.3	12.3	3.9	1.0
55 — 59 ".....	216	786	88	1,090	0.2	12.1	1.8	0.8
60 — 64 ".....	114	652	38	804	0.1	10.0	0.8	0.6
65 years or over.....	82	942	15	1,039	0.1	14.5	0.3	0.8
Totals, Stated Ages...	117,040	6,495	4,935	128,470	100.0	100.0	100.0	100.0
Age not stated.....	5	—	—	5	...	...	...	...
Totals, All Ages.....	117,045	6,495	4,935	128,475	91.1	5.1	3.8	100.0
Average ages.....	22.9	49.7	34.8	24.7	...	...	...	...

	BRIDEGROOMS							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 20 years.....	8,747	2	1	8,750	7.4	--	--	6.8
20 — 24 ".....	60,263	34	182	60,479	51.2	0.6	3.6	47.1
25 — 29 ".....	30,402	133	853	31,388	25.9	2.3	16.9	24.4
30 — 34 ".....	10,301	239	1,118	11,658	8.8	4.1	22.1	9.1
35 — 39 ".....	3,988	355	1,004	5,347	3.4	6.1	19.8	4.2
40 — 44 ".....	1,662	416	699	2,777	1.4	7.2	13.8	2.2
45 — 49 ".....	991	596	512	2,099	0.8	10.2	10.1	1.6
50 — 54 ".....	535	688	346	1,569	0.5	11.8	6.8	1.2
55 — 59 ".....	335	715	211	1,261	0.3	12.3	4.2	1.0
60 — 64 ".....	182	834	86	1,102	0.2	14.3	1.7	0.9
65 years or over.....	189	1,804	50	2,043	0.2	31.0	1.0	1.6
Totals, Stated Ages...	117,595	5,816	5,062	128,473	100.0	100.0	100.0	100.0
Age not stated.....	2	—	—	2	...	...	...	...
Totals, All Ages.....	117,597	5,816	5,062	128,475	91.5	4.5	3.9	100.0
Average ages.....	25.8	56.3	38.5	27.7	...	...	...	...

Religious Denominations of Brides and Bridegrooms.—The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 23 shows the very strong influence that religion has on

marriage. About 71 p.c. of all marriages are between persons of the same religious denomination; in 1961 among those of Jewish faith it was about 93 p.c.; among Roman Catholics about 88 p.c.; United Church about 60 p.c.; and Eastern Orthodox about 67 p.c.

23.—Marriages by Religious Denominations of Contracting Parties, 1961

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Anglican	Baptist	Eastern Orthodox	Jewish	Lutheran	Presbyterian	Roman Catholic ¹	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Anglican.....	7,216	518	100	13	391	624	1,934	3,291	528	—	14,615	11.4
Baptist.....	566	2,082	13	1	111	160	417	864	275	—	4,489	3.5
Eastern Orthodox...	125	30	1,670	2	79	37	381	252	66	—	2,642	2.1
Jewish.....	39	2	3	1,401	10	7	57	20	23	—	1,562	1.2
Lutheran.....	544	149	83	5	2,295	152	827	918	320	2	5,295	4.1
Presbyterian.....	799	183	26	2	127	1,681	566	1,112	191	1	4,688	3.6
Roman Catholic ¹ ...	1,956	384	211	23	767	492	53,964	2,445	880	2	61,124	47.6
United Church.....	3,304	828	163	8	712	982	2,411	14,454	969	2	23,833	18.6
Other sects.....	721	309	65	10	292	205	1,124	1,218	6,256	3	10,203	7.9
Not stated.....	5	2	—	—	4	1	4	3	3	2	24	...
Totals.....	15,275	4,487	2,334	1,465	4,788	4,341	61,685	24,577	9,511	12	128,475	100.0
P.C. of brides.....	11.9	3.5	1.8	1.1	3.7	3.4	48.0	19.1	7.4	...	100.0	70.8 ²

¹ Includes Greek Catholic denomination.

² Percentage of marriages between contracting parties of the same religious

Subsection 2.—Dissolutions of Marriage (Divorces)

Before World War I the number of divorces granted in Canada was very small. There were fewer than 20 divorces each year from Confederation to 1900, 21 in 1903, 51 in 1909 and 60 in 1913. These numbers represent less than one per 1,000 of the yearly number of marriages. At the end of World War I the number of divorces showed a definite increase, advancing to a peak of 8,213 in 1947, then declining gradually to a postwar low of 5,270 in 1951. From 1952 to 1959 the number fluctuated between 5,650 and 6,688, rose to 6,980 in 1960 and declined to 6,563 in 1961. Preliminary figures show there were 6,709 in 1962, a slight increase over 1961, despite the fact that no divorces were approved by the Canadian Parliament during the year for residents of Quebec and Newfoundland.

24.—Dissolutions of Marriage (Divorces), by Province, 1941-62

NOTE.—Figures for individual years from 1900 to 1952 are given in the 1956 Year Book, p. 230.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1941-45.....	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946-50.....	1	21	185	245	303	2,839	500	383	724	1,676	6,877
" 1951-55.....	5	10	212	167	327	2,430	356	231	612	1,461	5,811
" 1956-60.....	5	4	227	194	403	2,801	315	247	788	1,514	6,498
1953.....	9	15	185	181	273	2,824	374	218	603	1,478	6,160
1954.....	8	8	249	117	370	2,469	371	250	610	1,471	5,923
1955.....	1	7	253	181	396	2,531	337	237	627	1,483	6,053
1956.....	5	1	230	215	351	2,478	314	221	685	1,502	6,002
1957.....	6	2	250	206	519	2,873	305	242	726	1,559	6,688
1958.....	7	1	220	150	311	2,776	292	281	743	1,498	6,279
1959.....	1	6	215	221	351	2,915	301	276	836	1,420	6,543 ¹
1960.....	6	10	221	178	481	2,965	361	213	951	1,562	6,980 ²
1961.....	6	8	245	194	348	2,739	312	251	1,039	1,397	6,563 ²
1962p.....	—	5	229	181	—	3,081	339	281	1,084	1,490	6,709 ⁴

¹ Includes one in the Northwest Territories.

² Includes two in the Northwest Territories.

³ Includes 24 in Yukon Territory.

⁴ Includes 14 in Yukon Territory and five in the Northwest Territories.

Section 6.—Canadian Life Tables

Four official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951 and 1956. In addition, tables have been computed for Canada as a whole for the years 1945 and 1947 but, since these are based on *estimated* populations by sex and age and the deaths recorded in those years, they are not considered as reliable as those for the census years. The life table values for 1956 are given in abbreviated form in Table 25.

Life tables give some measure of the health and general conditions of survival of an 'artificial' population in a conventional, standard form. A hypothetical number (100,000) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1956, of 100,000 males born, 3,472 died in their first year so that 96,528 survived to one year of age; 241 died in their second year so that 96,287 survived to two years of age, and so on. At 100 years of age only 87 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the number of years which a person on the average might expect to live if the mortality rates in the given years remained constant throughout his lifetime.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late 'teens to early 30's and from age 50 to 65. For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. As an illustration of the information available from study of the life tables, it may be observed that at the mortality rates given in the 1956 life table (see Table 25) about 13,000 males would have died before reaching age 50 as compared with about 8,700 females; only 56,466 of the original group of 100,000 males would have survived to age 70 as compared with 70,327 females.

25.—Canadian Life Table, 1956

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
At birth.....	100,000		.03472	67.61	100,000		.02767	72.92
1 year.....	96,528	3,472	.00250	69.04	97,233	2,767	.00216	73.99
2 years.....	96,287	241	.00144	68.21	97,023	210	.00120	73.15
3 ".....	96,148	139	.00115	67.31	96,907	116	.00093	72.24
4 ".....	96,037	111	.00095	66.38	96,817	90	.00070	71.31
5 ".....	95,946	91	.00083	65.45	96,749	68	.00058	70.35
10 ".....	95,611	335	.00057	60.67	96,522	227	.00037	65.51
15 ".....	95,297	314	.00099	55.86	96,330	192	.00047	60.64
20 ".....	94,699	598	.00160	51.19	96,074	256	.00060	55.80
25 ".....	93,897	802	.00169	46.61	95,762	312	.00075	50.97
30 ".....	93,116	781	.00172	41.98	95,366	396	.00094	46.17
		844				498		

25.—Canadian Life Table, 1956—concluded

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
35 years.....	92,272		.00202	37.34	94,868		.00127	41.40
40 ".....	91,217	1,055	.00288	32.74	94,157	711	.00194	36.69
45 ".....	89,620	1,597	.00472	28.28	93,052	1,105	.00312	32.09
50 ".....	87,015	2,605	.00794	24.04	91,321	1,731	.00475	27.65
55 ".....	82,853	4,162	.01282	20.12	88,746	2,575	.00744	23.38
60 ".....	76,601	6,252	.02037	16.54	84,791	3,955	.01191	19.34
65 ".....	67,737	8,864	.03057	13.36	78,849	5,942	.01864	15.60
70 ".....	56,466	11,271	.04425	10.51	70,327	8,522	.02955	12.17
75 ".....	43,106	13,360	.06776	7.98	58,224	12,103	.05137	9.15
80 ".....	28,117	14,989	.10611	5.89	41,683	16,541	.08717	6.75
85 ".....	14,252	13,865	.16187	4.27	23,817	17,866	.13640	4.97
90 ".....	4,944	9,308	.23784	3.07	9,930	13,887	.19889	3.67
95 ".....	984	3,960	.33684	2.18	2,716	7,214	.27446	2.74
100 ".....	87	897	.46169	1.52	427	2,289	.36294	2.05

By 1956, life expectancy *at birth* in Canada had reached a new high record of 67.6 years for males and 72.9 for females—comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child *at present mortality risks* may, on the average, expect to live an additional 69.0 years and a female 74.0 years, representing for an infant boy a gain of 1.4 years over his expectation at birth and for an infant girl a gain of 1.1 years. The expectation of life of a 15-year-old boy is 55.9 additional years; of a 15-year-old girl 60.6 years. At 25 years of age the expectation is about 46.6 years for men and almost 51 years for women and at age 70, 10.5 years for men and 12.2 years for women.

Table 26 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951 and 1956. According to these figures, life expectancy at birth for men increased 1.3 years from 1951 to 1956 compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained 2.1 years from 1951 to 1956 compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1956 a total of 7.6 years was added to male life expectancy and 10.8 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, since 1931, 3.2 years have been added to the life expectancy of a five-year-old male, 2.1 years to a 20-year-old, nine months to a 40-year-old and three months to a 60-year-old as compared with 7.6 years for a newborn male. During this period, life expectancy for a five-year-old female gained 7.2 years, for a 20-year-old 6.0 years, for a 40-year-old 3.7 years and for a 60-year-old 2.2 years as compared with 10.8 years for a newborn female.

Longevity has improved for both sexes, though more so and at all ages for females, but there has been only slight improvement for males beyond middle life. Briefly, the

rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates have been established from about 50 years onward for males and from about 80 years onward for females.

The fact that such a pattern exists is important in interpreting the results of these life tables. The arbitrary population base of 100,000 of each sex in the 1956 tables, for example, has been subjected to the mortality rates in effect in 1955-57, and the life expectancy computed as if those death rates at each age were to prevail during their lifetime. Actually the theoretical 200,000 infants born in 1955-57 will most probably have a pattern of survival and life expectancy quite different from that of the present life tables as they will spend most of their lives under conditions of public health and medical care which in all likelihood will be superior to those prevailing in 1955-57.

The improvement in life expectancy, particularly among children and adolescents, is caused mainly by the substantial reduction in recent years in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the past quarter-century. As approximately 11 p.c. of deaths in 1955-57 occurred among infants and an additional 75 p.c. among persons over age 50, any additional improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combating diseases associated with middle and old age, such as cardiovascular-renal conditions and cancer.

26.—Expectation of Life, 1931, 1941, 1951 and 1956

Age	1931		1941		1951		1956	
	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth.....	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92
1 year.....	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99
2 years.....	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15
3 ".....	63.84	64.75	64.88	67.38	66.68	70.66	67.31	72.24
4 ".....	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31
5 ".....	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35
10 ".....	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51
15 ".....	53.41	53.15	54.06	56.36	55.39	59.19	55.86	60.64
20 ".....	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80
25 ".....	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97
30 ".....	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17
35 ".....	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40
40 ".....	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69
45 ".....	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09
50 ".....	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65
55 ".....	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38
60 ".....	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34
65 ".....	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60
70 ".....	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17
75 ".....	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15
80 ".....	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75
85 ".....	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97
90 ".....	2.97	3.24	2.93	3.13	3.10	3.24	3.07	3.67
95 ".....	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74
100 ".....	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05

Section 7.—International Comparisons of Vital Statistics

Table 27 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by four countries—Venezuela, the Union of Soviet Socialist Republics, Japan and the Netherlands—and that some of the provinces have lower rates than most other countries. The birth rate also helps to give Canada one of the fastest growing populations, currently ranking eighth among those listed. However, 13 countries reported lower rates of infant mortality.

27.—Principal Vital Statistics of Selected Countries, 1961

Note.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.

Source: United Nations publications.

Country or Province	Births		Deaths		Infant Mortality		Neo-natal Mortality ¹		Maternal Mortality		Marriages		Natural Increase	
	Rate ²	Rank	Rate ²	Rank	Rate ⁴	Rank	Rate ³	Rank	Rate ⁵	Rank	Rate ²	Rank	Rate ²	Rank
Australia.....	22.8	13	8.5	6	20	4	15 ⁴	5	0.5 ⁴	3	7.3	12	14.3	11
Austria.....	13.5	20	12.0	22	33	14	22	11	0.9 ⁴	6	8.4	7	6.5	25
Belgium.....	17.0	26	11.8	21	26	8	21 ⁴	10	0.4 ⁴	2	5.2	16	5.2	27
Canada.....	26.1	8	7.7	5	27	9	18	8	0.5	3	7.0	14	18.4	6
Newfoundland.....	34.1	...	6.6	...	38	...	21	...	0.7	...	...	...	...	...
Prince Edward Island.....	27.1	...	9.3	...	33	...	19	...	0.4	...	...	...	...	...
Nova Scotia.....	20.3	...	8.3	...	33	...	17	...	0.2	...	...	...	...	...
Nova Brunswick.....	27.7	...	7.9	...	26	...	15	...	0.5	...	...	...	...	...
Quebec.....	26.1	...	7.0	...	31	...	21	...	0.6	...	...	...	...	...
Ontario.....	25.3	...	8.2	...	23	...	17	...	0.4	...	...	...	...	...
Manitoba.....	25.3	...	8.0	...	25	...	16	...	0.6	...	...	...	...	...
Saskatchewan.....	25.9	...	7.7	...	26	...	18	...	0.3	...	...	...	...	...
Alberta.....	23.2	...	6.7	...	27	...	18	...	0.2	...	...	...	...	...
British Columbia.....	23.7	...	8.3	...	24	...	15	...	0.3	...	...	...	...	...
Yukon Territory.....	38.1	...	6.4	...	41	...	18	...	1.8	...	...	...	...	...
Northwest Territories.....	35.6	...	11.4	...	111	...	35	...	...	...	...	...	...	...
Ceylon.....	37.0 ⁵	3	9.1 ⁵	10	58 ⁵	19	34 ⁵	16	3.4 ⁵	13	6.4 ⁵	19	37.2	3
Chile.....	11.7	20	12.7 ⁴	25	65 ⁴	26	39 ⁴	19	3.2 ⁴	12	7.2	13	27.9 ⁸	4
Denmark.....	34.6	4	11.7	20	127 ⁴	25	39 ⁴	19	3.2 ⁴	12	7.2	13	22.9	4
England and Wales.....	16.7	28	9.5	13	22	6	16 ⁴	6	0.3 ⁴	1	8.0	8	7.2	24
Finland.....	17.4	25	12.0	22	21	5	15	5	0.3	1	7.5	11	5.4	26
France.....	18.4	21	9.0	9	20	4	14 ⁴	4	0.7 ⁴	4	7.7	10	9.4	18
Germany, Federal Republic of.....	18.4	21	11.0	18	26	8	17	7	0.5 ⁴	3	6.7	17	7.4	22
India ¹	18.2	22	10.9	17	32	13	23	12	1.1 ⁴	7	9.4	3	7.3	23
Ireland.....	27.9	6	12.2	23	100 ⁷	23	...	...	...	...	...	...	15.7	10
Italy.....	21.3	16	12.3	24	30	11	21	10	0.5	3	5.4	21	9.0	19
Japan.....	18.8	19	9.4	12	44 ⁴	17	24 ⁴	13	1.1 ⁴	7	8.0	8	9.4	18
Mexico.....	45.9	1	7.4	3	31 ⁴	12	17 ⁴	7	1.3 ⁴	9	9.5	2	9.5	17
Netherlands.....	21.2	17	10.6	15	75 ⁴	20	28 ⁴	15	2.1 ⁴	11	6.3	20	34.3	2
New Zealand.....	27.1	7	7.6	4	15	1	11	1	0.4 ⁴	2	8.0	8	13.6	13
Norway.....	27.1	7	9.0	9	19	3	15 ⁴	5	0.5	3	6.9	15	11.1	16
Northern Ireland.....	15	15	11.3	19	28	10	19	9	0.5	3	8.0	8	18.1	7
Peru.....	24	11	9.1	10	19 ⁴	3	12 ⁴	2	0.4 ⁴	2	6.5	22	21.2 ⁴	21
Portugal.....	32.5 ⁴	5	11.3 ⁴	10	103 ⁴	24	37 ⁴	18	1.2	8	8.5	18	21.2 ⁴	5
Scotland.....	11	18	10.7	16	89	22	28 ⁴	18	0.4	2	7.8	23	12.9	14
Spain.....	19.9	18	12.3	24	26	16	18	8	0.4	2	7.8	23	12.9	14
Sweden.....	21.3	16	9.8	14	16	2	13	3	0.7 ⁴	5	7.8	9	12.7	15
Switzerland.....	13.9	29	8.6	14	21 ⁴	11	19 ⁴	9	0.7 ⁴	5	7.7	10	12.7	15
South Africa (Whites).....	25.1	9	8.6	8	30 ⁴	11	18 ⁴	8	0.6 ⁴	4	9.3 ⁴	14	16.2	9
Union of Soviet Socialist Republics.....	24.9 ⁴	10	7.1 ⁴	2	35 ⁴	15	...	...	...	...	...	...	8.8	20
United States.....	23.4	12	9.3	11	25	15	...	...	...	...	...	...	17.1 ⁴	12
Venezuela.....	44.4	2	7.0	1	65 ⁴	18	...	...	...	...	...	...	14.1	8
Yugoslavia.....	22.6	14	9.0	9	87 ⁴	21	39 ⁴	17	1.5 ⁴	10	5.0	22	37.4	1

¹ Under four weeks unless otherwise stated.
² Per 1,000 population.
³ Excluding children born alive but dead before registration of their birth.⁴ 1960.
⁵ 1959.
⁶ Under one calendar month.

CHAPTER VI.—PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY*

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's growth in the past eighteen years has created many new problems in the planning of health and welfare services. Population has increased by one half in this period. General prosperity, growing urbanization and industrialization, larger numbers of children and old persons in the population, and new concepts and knowledge in health and welfare matters have all contributed to needs for additional services and to a greater interdependence among the different health and welfare professions.

During 1962, the Royal Commission on Health Services continued its investigation into the existing health facilities and the future needs for health services for the people of Canada; its report is expected to be made during the summer of 1963. The nation's attention was attracted to health problems by two major events during the year. The tragic

*Except where otherwise indicated, this Chapter was prepared by the Research and Statistics Division of the Department of National Health and Welfare, Ottawa.

discovery early in 1962 that a number of babies were born with deformed limbs, presumably because their mothers had taken thalidomide early in pregnancy, focused attention on the legislation controlling the introduction of new drugs. Three amendments to the Food and Drug Act were made in 1962 tightening the control over the distribution of drugs, and the Medical Rehabilitation Grant was increased to provide funds for the care and treatment of children whose deformities were attributable to thalidomide. More than 65 such children had been identified by March 1963. The implementation of the Saskatchewan Medical Care Insurance Plan on July 1, 1962 was accompanied by the withdrawal of normal services by most physicians in the province and the creation of a temporary emergency service operated by the College of Physicians and Surgeons in 29 hospitals; by July 23 agreement was reached on certain amendments in the Plan and normal services were restored. The Ontario and Alberta Legislatures early in 1963 were considering the possibility of introducing provincial medical care insurance plans, but for the most part insurance for medical care in Canada was still based on voluntary prepayment plans with approximately one half the population enrolled. However, over 98 p.c. of the insurable population was covered under the nation-wide hospital insurance and diagnostic services program operated by the provinces with federal financial support. During the year more than three million patients were admitted to general hospitals and almost 95 p.c. of the half-million births occurred in hospital.

Development in the sciences related to medicine, improved health services, and better nutritional and other standards are contributing to generally favourable health conditions—to a declining death rate and a longer expectation of life. Substantial progress in the fight against contagious diseases has not yet been paralleled by progress in solving the problems presented by chronic illness and the disabilities of older persons. Heart and hypertensive diseases, arthritis and rheumatism are among the leading causes of disability, although residual disability from stroke, Parkinson's disease, epilepsy and multiple sclerosis also accounts for large numbers of disabled persons. The death rate from lung cancer continues to increase and the disease is the subject of continuing investigation. Interest in mental illness has increased in recent years and new approaches to the solution of this major problem are being explored. Accidents, especially traffic accidents, constitute a steady and tragic problem, particularly as they affect children. Canada shares the world-wide concern for the hazards of radiation from medical and industrial causes as well as from fallout, and has devoted considerable attention to this problem.

Progress in the welfare field also continues to be substantial and efforts are concentrated on remaining problems, some of which are of considerable magnitude. Ontario in 1962 introduced a Bill to extend and improve private pension plans and to make pension benefits portable; a revised version of the Bill was introduced in March 1963 and was passed by the Legislature early in May. At the same time, the Federal Government continued to develop its plans for a nation-wide contributory old age, survivors' and disability insurance program, and requested provincial approval for a constitutional amendment to give it necessary authority. In November 1962 the Federal Government established a welfare grant program providing grants for general welfare projects, professional training and research; initially \$250,000 was allocated for this program, with the expectation of a tenfold increase in the next five years. This program takes its place beside the \$5,000,000 fitness and amateur sport grant program introduced in 1961 and the health grant program introduced in 1948, which now has an annual allocation of \$55,000,000. Proposals for improved general assistance programs are being explored and Quebec, in December 1961, set up an independent Committee on Public Assistance to study this whole question, including appropriate allowance scales and the co-ordination of public and private efforts.

Rapid urbanization, large-scale immigration and increasing numbers of older persons in the population are among the forces requiring new approaches to Canada's welfare problems. At the same time, the growth of the industrial community has been associated with a marked improvement in the general standard of living. Higher real income has

permitted better levels of nutrition and better housing in the urban industrial centres. During the past decade, many urban services have been extended to the rural population, so that improvements in the national standard of living are being shared more equally by the urban and rural populations.

PART I.—PUBLIC HEALTH

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

Section 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for collection, analysis and publication of national health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare controls food and drugs, including narcotics, operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It advises on the visual eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Health counselling and medical supervision are provided for the federal Civil Service. The Department also administers the civil aviation medical program for the Department of Transport.

The Department serves the provinces in an advisory and co-ordinating capacity and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Hospital Insurance and National Health Grant Programs has become a major activity during the past decade.

Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of public health.

Subsection 1.—National Health Grant Program

The National Health Grant Program, inaugurated in 1948, initially made ten federal grants available to the provinces for the development and strengthening of public health and hospital services. Nine were continuing grants: the Hospital Construction, Professional Training, General Public Health, Public Health Research, Mental Health, Tuberculosis Control, Cancer Control, Venereal Disease Control, and Crippled Children Grants. The Health Survey Grant lapsed in 1953 following completion of provincial health surveys. In 1953, after a review of the first five years of the Program, three new grants were established: Child and Maternal Health, Medical Rehabilitation, and Laboratory and Radiological Services.

In 1958, federal assistance under the Hospital Construction Grant was increased to \$2,000 per hospital bed (whether active treatment, chronic, mental or tuberculosis), double the previous grant for active treatment beds. In addition, funds were made available to meet up to one third of the cost of approved alterations and renovations to existing facilities, with the federal contributions being at least matched by the provinces.

Beginning with the fiscal year 1960-61, a redistribution and merging of certain grants was effected to provide a more flexible measure of assistance and at the same time make larger amounts available for programs where additional aid was necessary. Adjustments were also required for services aided under certain grants, such as laboratory and radiological services and cancer control, now aided under the Hospital Insurance Program. The total allocation remained approximately the same but the number of separate grants was reduced to nine. The General Public Health Grant was increased by almost \$5,500,000 and projects under two previously separate grants—the Laboratory and Radiological Services Grant and the Venereal Disease Control Grant—were absorbed into it. The Medical Rehabilitation and Crippled Children Grants were merged and the combined allocation increased by more than \$1,000,000. The Mental Health Grant was increased by more than \$1,500,000, and the Professional Training and the Public Health Research Grants by about \$1,250,000 each. The Tuberculosis Control Grant was decreased by nearly \$750,000 and the Child and Maternal Health and Cancer Control Grants by lesser amounts. The grants for professional training and public health research, previously fixed amounts, were placed on a per capita basis, to increase with expansion of the population.

Up to Mar. 31, 1962, aid for hospital construction had been approved for 101,322 beds, 12,633 bassinets, 20,495 nurses' beds, 663 interns' beds, and space in community health centres and laboratories. Approximately 33,694 health workers had been trained or were undergoing special training and more than 6,500 health workers were employed with federal grant assistance. The proportion of the total grants appropriation paid out to the provinces has increased steadily. Payments in 1961-62 totalled \$48,999,753, or 89 p.c. of the amount available; the average utilization during the fourteen years of the program was 76 p.c.

1.—Amounts Available and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the Fourteen-Year Period Ended Mar. 31, 1962 and for the Year Ended Mar. 31, 1962.

Grant	1948-62 Period			Year Ended Mar. 31, 1962		
	Amount Available ¹	Amount Expended	Percentage Expended	Amount Available ¹	Amount Expended	Percentage Expended
	\$	\$		\$	\$	
Crippled Children ²	6,207,728	4,431,677	71	—	—	—
Professional Training.....	9,704,544	9,176,330	95	1,781,400	1,447,457	81
Hospital Construction.....	170,949,852	152,810,959	89	17,367,320	18,999,996 ³	109
Venereal Disease Control ⁴	5,968,336	5,146,209	86	—	—	—
Mental Health.....	91,781,665	73,671,659	80	8,765,391	8,237,447	94
Tuberculosis Control.....	55,544,862	51,654,874	93	3,500,000	3,249,366	93
Public Health Research.....	8,652,648	7,386,920	85	1,781,400	1,617,096	91
Health Surveys ⁵	645,180	540,960	84	—	—	—
General Public Health.....	112,765,401	77,687,139	69	14,251,200	9,659,723	68
Cancer Control.....	50,065,653	34,875,936	70	3,500,000	2,785,311	80
Laboratory and Radiological Services ⁶	47,404,300	14,450,881	30	—	—	—
Medical Rehabilitation ⁷	6,500,000	3,016,750	46	—	—	—
Child and Maternal Health ⁸	15,000,000	10,197,161	68	1,750,000	1,388,443	79
Medical Rehabilitation and Crippled Children ⁹	5,250,000	2,774,118	53	2,625,000	1,614,914	62
Totals.....	586,440,169	447,821,573	76	53,321,711	48,999,753	89

¹ As set out in the General Health Grant Rules, 1960.

² Expenditure exceeds 100 p.c. of amount available through revote of funds unused in previous years. Absorbed into General Public Health Grant, Apr. 1, 1960.

³ Absorbed into General Public Health Grant, Apr. 1, 1960.

⁴ Children Grant, Apr. 1, 1960.

⁵ Introduced in 1953.

⁶ Merged with Medical Rehabilitation Grant, Apr. 1, 1960.

⁷ Lapsed in 1953.

⁸ Introduced in 1953 and merged with Crippled

⁹ Amounts for 1960-62 only; see footnotes ² and ⁷.

Subsection 2.—Hospital Insurance

The federal-provincial hospital insurance program, established in all provinces and both territories, covers 98.7 p.c. of the insurable population of Canada. The system of federal grants-in-aid to the provinces to help meet the cost of specified hospital services is set out under the federal Hospital Insurance and Diagnostic Services Act of 1957. The methods of financing and administering the provincial plans, as well as the types of service offered above the minimum stipulated in the Act, rest with the provinces.

Federal legislation covers specified hospitals, generally including acute, chronic and convalescent institutions. Tuberculosis and mental hospitals are excluded from the federal-provincial plan, as are institutions providing custodial care. On the other hand, the psychiatric and tuberculosis units of general hospitals are included.

The range of in-patient benefits that, under the Act, is required to be provided includes standard ward accommodation and meals, nursing service, drugs and biologicals, surgical supplies, the use of operating and case rooms, diagnostic procedures (including X-ray and laboratory procedures) together with necessary medical interpretations, and the use of radiotherapy and physiotherapy facilities where available. The same benefits for out-patients, although authorized for assistance under the federal legislation, are not mandatory upon provincial plans. All provinces but one provide insured out-patient services. The pattern varies from province to province, but among the services offered are emergency care following accidents, diagnostic services and therapeutic services including minor surgical and medical procedures. Some provinces provide certain psychiatric out-patient services.

There is considerable variation between provinces in the administration and financing of programs. General revenues, provincial sales taxes and personal premiums are utilized, separately and in combination, in different provinces. The Federal Government pays each province 25 p.c. of the per capita cost of in-patient services in Canada as a whole, together with 25 p.c. of the per capita cost of in-patient services in the province, multiplied by the average for the year of the number of insured persons in the province. On a national basis, the federal contribution amounts to about 50 p.c. of shareable costs. However, for individual provinces the proportion of shareable costs met by the Federal Government varies, with a higher proportion of the cost of low-cost programs being met than of high-cost programs. Federal payments to the provinces under the program from July 1, 1958 to Mar. 31, 1962, as shown in Table 2, totalled nearly \$680,000,000.

2.—Federal Payments to Participating Provinces under the Hospital Insurance and Diagnostic Services Act, July 1, 1958-Mar. 31, 1962

Province or Territory	July 1-Dec. 31, 1958	Calendar Year 1959	Calendar Year 1960	Calendar Year 1961	Jan. 1-Mar. 31, 1962
	Contributions	Contributions	Advances ¹	Advances ¹	Advances ¹
	\$	\$	\$	\$	\$
Newfoundland.....	1,990,135	4,788,014	4,993,524	5,626,924	1,490,205
Prince Edward Island.....	—	235,524	1,072,409	1,203,258	328,848
Nova Scotia.....	—	8,149,540	9,284,357	10,595,263	3,174,483
New Brunswick.....	—	3,331,614	7,324,198	9,086,618	2,294,131
Quebec.....	—	—	—	66,746,709	20,212,549
Ontario.....	—	72,610,304	80,860,904	95,016,981	25,528,010
Manitoba.....	4,779,866	11,559,010	12,599,069	14,086,401	3,746,496
Saskatchewan.....	5,775,876	13,276,380	14,087,668	15,119,648	3,956,524
Alberta.....	6,494,722	14,362,663 ¹	16,378,050	18,778,936	5,095,077
British Columbia.....	8,609,463	20,035,811	21,955,550	24,271,046	6,511,249
Yukon Territory.....	—	—	112,206	269,521	82,994
Northwest Territories.....	—	—	180,126	362,037	97,628
Totals.....	27,650,062	148,343,860²	168,848,061	261,163,343	72,518,194
Cumulative Total, July 1, 1958-Mar. 31, 1962.....					678,553,520

¹ Advances only; a final adjustment of \$953,006 was withheld.
holdback not available.

² See footnote 1.

³ Amount of

The data appearing in Tables 3 to 5 pertain either to hospitals in the provinces participating during the whole calendar year or (where noted) to hospitals in provinces participating by the end of 1960. The tables refer to hospitals listed in the hospital insurance agreements. Hospitals participating in hospital insurance programs are designated as "budget review hospitals", which comprise the bulk of hospitals listed in the agreements, and contract hospitals, which are defined in the hospital insurance regulations as private or industrial hospitals with which a province has contracted for the provision of insured services. Federal hospitals, also listed in the agreements, are included in Tables 3 and 4. Budget review hospitals include general hospitals designed for acute or short-term care, special hospitals and chronic hospitals.

On Dec. 31, 1960, nine provinces and both territories were participating in the hospital insurance program. The 1,024 hospitals of all categories reporting showed a total of 86,178 beds and cribs set up at the end of 1960, a rate of 6.7 beds per thousand population; provincial rates ranged from 4.3 in Newfoundland to 8.4 in Alberta. The volume of hospital days per thousand population also varied considerably from province to province; the rate for the nine provinces participating in the hospital insurance program during 1960 was 1,980.4 days, a rate considerably below the averages in Saskatchewan and Alberta but well above the averages in Newfoundland and Prince Edward Island. In these nine provinces, 87.1 p.c. of all days of care in hospital were insured days in 1960.

3.—Number of Beds and Cribs in Hospitals Listed in Hospital Insurance Agreements, with Rate per 1,000 Population, by Province, as at Dec. 31, 1960

Province or Territory	No. of Hospitals Reporting	Beds and Cribs	
		Number	Rate ¹
Newfoundland.....	40	1,968	4.3
Prince Edward Island.....	9	649	6.2
Nova Scotia.....	48	4,003	5.5
New Brunswick.....	38	3,593	6.1
Ontario.....	326	39,687	6.4
Manitoba.....	99	6,559	7.2
Saskatchewan.....	167	7,546	8.2
Alberta.....	159	11,069	8.4
British Columbia.....	112	10,520	6.5
Yukon Territory.....	3	157	11.2
Northwest Territories.....	23	427	18.6
Totals, Nine Provinces and Two Territories.....	1,024	86,178	6.7

¹ Per 1,000 population; based on population estimated as at Jan. 1, 1961.

4.—Total Patient-Days and Insured Patient-Days in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Total and Insured Population, by Province, 1960

Province	No. of Hospitals Reporting	Total Patient-Days during Year		Insured Patient-Days during Year		Insured as a Percentage of Total Patient-Days
		Number	Rate ¹	Number	Rate ²	
Newfoundland.....	40	579,867	1,294.3	524,656	1,148.0	90.5
Prince Edward Island.....	9	160,926	1,562.4	140,857	1,622.6	87.5
Nova Scotia.....	48	1,153,602	1,586.8	1,030,541	1,468.0	89.3
New Brunswick.....	38	1,097,127	1,862.7	929,674	1,780.1	84.7
Ontario.....	323	12,196,676	1,995.9	10,587,204	1,857.9	86.8
Manitoba.....	100	1,797,564	1,984.1	1,543,755	1,750.1	85.9
Saskatchewan.....	159	2,118,510	2,315.3	1,990,543	2,240.5	94.0
Alberta.....	121	2,840,181	2,200.0	2,540,354	1,997.1	89.4
British Columbia.....	112	3,191,467	1,992.2	2,595,285	1,628.2	81.3
Totals, Nine Provinces.....	950	25,135,920	1,980.4	21,882,869	1,808.0	87.1

¹ Per 1,000 total population; based on population estimated as at June 1, 1960.

² Per 1,000 insured population; based on annual average number of insured persons under provincial plans, 1960.

The total cost of operating budget review hospitals in the nine participating provinces in 1960, including items of expense not covered under the hospital insurance program, was \$462,400,000. This total included \$298,800,000 for salaries and wages, \$15,900,000 for medical supplies, \$20,100,000 for drugs, \$30,800,000 for food, \$63,900,000 for other departmental supplies and expenses, and \$32,900,000 for other expenses consisting mainly of interest payments and depreciation allowances. Table 5 gives various classifications of these expenditures.

The per patient-day cost of salaries and wages ranged from a low of \$8.67 for Prince Edward Island to a high of \$15.34 for British Columbia, the average for the nine provinces being \$13.88. There was little variation among the provinces in costs of drugs and of medical supplies. Since raw food cost includes food supplied to staff, in-patients and visitors, the differences in such costs per patient-day probably reflect variations in the proportion of hospital staff taking meals at the hospitals rather than variations in the cost of food per meal served. The main items comprising "Other Supplies and Expense" are fuel, electricity, water, insurance, replacements of bedding and linen, laundry supplies, housekeeping and cleaning supplies, repairs to buildings, repairs to furniture and equipment, maintenance of physical plant, printing, postage, stationery, office supplies and telephone.

The total per capita operating cost of hospitals in the nine provinces was \$36.43, ranging from \$21.06 in Newfoundland to \$42.33 in Saskatchewan. The variations in total per capita expenses are very large, partly because of the variation in the number of hospital days of care provided per thousand persons in each province.

The percentage distribution of expenses shows that about 65 p.c. of the operating costs of the hospitals was for wages and salaries, 3 p.c. for medical supplies, 4 p.c. for drugs, 7 p.c. for food, 14 p.c. for other departmental supplies and expenses and 7 p.c. for depreciation, interest and other non-departmental expenses. British Columbia hospitals spent almost 68 p.c. of their operating funds on salaries and wages as compared with 52 p.c. in Prince Edward Island.

5.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1960

Province	Departmental Expenditures						Total Revenue Fund Expense ¹
	Salaries and Wages	Medical and Surgical Supplies	Drugs	Raw Food	Other Supplies and Expense	Total Departmental Expense	
AMOUNTS OF EXPENDITURES							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	5,048,899	363,583	569,968	1,120,465	1,811,294	8,914,209	9,436,015
Prince Edward Island..	1,333,588	86,258	129,942	242,473	497,893	2,290,154	2,575,236
Nova Scotia.....	12,835,999	896,059	927,174	1,927,770	4,178,915	20,765,917	22,158,661
New Brunswick.....	11,514,362	766,472	957,121	1,661,562	3,417,245	18,316,762	20,842,604
Ontario.....	150,913,386	7,750,063	9,769,654	14,300,042	30,851,743	213,584,888	229,573,410
Manitoba.....	21,260,533	1,092,248	1,665,945	1,963,310	4,377,444	30,359,480	32,368,470
Saskatchewan.....	25,384,723	1,162,311	1,632,918	2,417,729	5,375,049	35,972,730	38,729,329
Alberta.....	29,999,355	1,875,291	1,970,099	3,631,264	5,820,980	43,296,989	47,058,143
British Columbia.....	40,486,093	1,937,112	2,514,737	3,514,122	7,536,733	55,988,797	59,618,610
Totals, Nine Provinces.....	298,776,938	15,929,397	20,137,558	30,778,737	63,867,296	429,489,926	462,360,478

¹For footnote, see end of table.

5.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1960—concluded

Province	Departmental Expenditures						Total Revenue Fund Expense ¹
	Salaries and Wages	Medical and Surgical Supplies	Drugs	Raw Food	Other Supplies and Expense	Total Departmental Expense	
EXPENDITURES PER PATIENT-DAY ²							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	10.57	0.76	1.19	2.34	3.79	18.66	19.75
Prince Edward Island..	8.67	0.56	0.84	1.58	3.24	14.89	16.74
Nova Scotia.....	12.42	0.87	0.90	1.87	4.04	20.10	21.45
New Brunswick.....	11.79	0.78	0.98	1.70	3.50	18.75	21.34
Ontario.....	14.72	0.76	0.95	1.40	3.01	20.84	22.40
Manitoba.....	13.65	0.70	1.07	1.26	2.81	19.50	20.79
Saskatchewan.....	13.37	0.61	0.86	1.27	2.83	18.94	20.39
Alberta.....	11.79	0.74	0.77	1.43	2.29	17.01	18.49
British Columbia.....	15.34	0.73	0.95	1.33	2.86	21.22	22.60
Totals, Nine Provinces.....	13.88	0.74	0.94	1.43	2.97	19.95	21.47
EXPENDITURES PER CAPITA ³							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	11.27	0.81	1.27	2.50	4.04	19.90	21.06
Prince Edward Island..	12.95	0.84	1.26	2.35	4.83	22.23	25.00
Nova Scotia.....	17.66	1.23	1.28	2.65	5.75	28.56	30.48
New Brunswick.....	19.55	1.30	1.62	2.82	5.80	31.10	35.39
Ontario.....	24.69	1.27	1.60	2.34	5.05	34.95	37.57
Manitoba.....	23.47	1.20	1.84	2.17	4.83	33.51	35.73
Saskatchewan.....	27.74	1.27	1.78	2.64	5.87	39.31	42.33
Alberta.....	23.24	1.45	1.53	2.81	4.51	33.54	36.45
British Columbia.....	25.27	1.21	1.57	2.19	4.70	34.95	37.22
Totals, Nine Provinces.....	23.54	1.25	1.59	2.43	5.03	33.84	36.43
PERCENTAGE DISTRIBUTION OF EXPENDITURES							
Newfoundland.....	53.5	3.9	6.0	11.9	19.2	94.5	100.0
Prince Edward Island..	51.8	3.3	5.0	9.4	19.3	88.9	100.0
Nova Scotia.....	57.9	4.0	4.2	8.7	18.9	93.7	100.0
New Brunswick.....	55.2	3.7	4.6	8.0	16.4	87.9	100.0
Ontario.....	65.7	3.4	4.3	6.2	13.4	93.0	100.0
Manitoba.....	65.7	3.4	5.1	6.1	13.5	93.8	100.0
Saskatchewan.....	65.5	3.0	4.2	6.2	13.9	92.9	100.0
Alberta.....	63.7	4.0	4.2	7.7	12.4	92.0	100.0
British Columbia.....	67.9	3.2	4.2	5.9	12.6	93.9	100.0
Totals, Nine Provinces.....	64.6	3.4	4.4	6.7	13.8	92.9	100.0

¹ Includes other revenue fund expense.² Based on patient-days during year for adults and children.³ Based on population estimated as at June 1, 1960.

Subsection 3.—Food and Drug Control

The Food and Drugs Act is a federal statute with provisions applying to the manufacture, advertising, packaging and sale of foods, drugs, cosmetics and medical devices anywhere in Canada. Wide powers are authorized under this legislation to maintain the

safety, purity and quality of food and drug products and to prevent misrepresentation in labelling and advertising. There are prohibitions, for example, on the sale of food or drugs that do not meet prescribed standards, are harmful, adulterated, dirty, improperly stored, or manufactured under unsanitary conditions. The Act also prohibits the advertising of any food, drug, cosmetic or medical device as a preventive or cure for a number of serious diseases and also lists drugs that may be sold only by prescription.

Standards of safety and purity are maintained through constant and widespread inspection and laboratory research. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods. The sale for human consumption of meat from animals that were not healthy at the time of slaughter or that died from disease is expressly prohibited. With advances in modern food technology, methods of laboratory analysis must be developed to assure the safety of new types of ingredients and packaging materials. In recent years there has been an increase in the number of chemicals used in foods and the safety of the foods to which they are added becomes a matter for special research. Another subject of current importance is the bacteriology of frozen foods in guarding against contamination through improper storage of frozen foods already cooked. Since the Food and Drugs Act is intended for the protection of consumers, a section of the Food and Drug Directorate has been established to obtain consumer opinion and deal with individual consumer complaints as well as to provide sound information on which consumers can base opinions.

Drug standards are subject to continuous review and testing. Stringent licensing controls apply to drugs made for injection into the human body, such as vaccines, sera and antibiotics and, prior to licensing, the safety of the product is verified in federal laboratories. Detailed information on all new drugs must be reviewed by the Directorate before release for sale is permitted. The listing of drugs to be sold only on prescription is determined in co-operation with the medical and pharmaceutical associations. In general, any drug that can be classed as a sedative, hypnotic or tranquillizer goes automatically on the prescription list. To provide more effective control of certain drugs coming mainly under the class of barbiturates and commonly known as 'goof balls', an amendment to the Food and Drugs Act was enacted in 1961. This requires the licensing of persons dealing in these substances, as well as the keeping of special records, and limits the importation, manufacture, distribution and use of such drugs to medical purposes.

The Food and Drug Directorate also administers the Proprietary or Patent Medicine Act which is concerned with the registration before marketing and the annual licensing of secret-formula medicines sold under proprietary or trade names.

Regulation of the supply and use of narcotic drugs is carried out under the Narcotic Control Act. The legislation, as revised in 1961, authorizes more severe penalties for smuggling and trafficking in narcotic drugs, and introduces special provisions relating to the control and custody of narcotic addicts for purposes of treatment. The minimum sentence of six months for illegal possession is removed and the legislation now prescribes a penalty of seven years with no minimum for this offence; the maximum penalty for trafficking is increased from 14 years to life imprisonment; and illegal export and import is established as a special offence for which the minimum and maximum penalties are, respectively, seven years and life imprisonment. Persons convicted of offences under the Act who are found to be drug addicts may be sentenced for treatment, for an indeterminate period, in institutions that will operate under the penitentiaries system and the National Parole Board service.

During 1962 three amendments to the Food and Drug Act were enacted to reinforce certain aspects pertaining to the control of drugs. These were concerned with providing authority (1) to prescribe the conditions respecting the distribution of samples of drugs by pharmaceutical manufacturers to the medical, dental, veterinary and pharmacy professions; (2) to prohibit the sale of certain designated drugs (Schedule H) in the interests of public health; and (3) to define more clearly the requirements regarding the introduction of new drugs for clinical trial and marketing.

Subsection 4.—Medical Services

Indians and Eskimos.—Through the Directorate of Medical Services, the Department of National Health and Welfare staffs and operates various facilities for a registered population of about 192,000 Indians and 12,000 Eskimos. Responsibility for the general welfare of Indians and Eskimos in the community is shared with the Indian Affairs Branch of the Department of Citizenship and Immigration and with the Department of Northern Affairs and National Resources.

In the provinces, the Department provides medical and public health services to registered Indians or Eskimos who are not included under provincial arrangements and who are unable to afford to provide for themselves. A large volume of the service in treatment and health education is rendered to patients through departmental clinics of the out-patient type which are staffed by medical and other public health personnel. In remote areas, the key facility is frequently the departmental nursing station, a combined emergency treatment and public health unit having two to four beds under the direction of one or two nurses; about 50 of these were operated throughout Canada in 1962. The Department maintains about 20 hospitals at strategic points and co-operates elsewhere with community, mission or company hospitals. General and chronic hospital care is prepaid as part of provincial hospital insurance schemes, and mental and tuberculosis care is met directly by the Federal Government.

The accessibility of essential medical and health services to most of the Indian population and, to a lesser extent the Eskimo, has made possible a steady decline in the incidence of disease, although the rate is still high. Wherever practicable, there has been an increasing integration with provincial and municipal health agencies. Native health workers are being trained to give instruction in health care and sanitation.

Northern Health.—Because of the special problems in developing health services in the Far North, the Directorate has been given the responsibility of co-ordinating federal and territorial health care for all residents. In so doing, it undertakes the functions of a health department for the Council of the Northwest Territories and assists the territorial government of the Yukon in its steps to provide certain health services. A close liaison is maintained with the federal departments directly responsible for administrative matters affecting these groups or geographic areas.

In the Yukon Territory, services for the white population administered through the Commissioner for the Yukon and provided on a cost-sharing basis with the Department of National Health and Welfare include complete treatment for tuberculosis, payment for services rendered at the Alberta cancer clinics, mental hospital care through arrangements with the Province of British Columbia and medical care for indigent patients. Public health nursing services, measures for control of communicable diseases, and administration of the principal public hospital are primarily the responsibility of the Northern Health Service of the Department of National Health and Welfare. In the Northwest Territories similar services are administered through the Northern Health Service, the costs being shared by the Department of Northern Affairs and National Resources and the Department of National Health and Welfare. Indigent residents are eligible for medical, dental and optical services as well as for tuberculosis and mental care.

Hospital insurance plans in both the Yukon and Northwest Territories came into operation in 1960.

Immigrants.—The Department of National Health and Welfare advises on the administration of sections of the Immigration Act dealing with health, and conducts in Canada and other countries the medical examination of applicants for immigration. It also provides care for immigrants who become ill en route to their destination or while awaiting employment. Further assistance in the provision of hospital and medical services is available to indigent immigrants during their first year in Canada, either from the Federal Government or from the province with federal sharing of costs.

Quarantine.—Under the Quarantine Act, all vessels, aircraft and other conveyances together with their crew members and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry and spread of quarantinable diseases in Canada. Fully organized quarantine stations are located at all major seaports and airports.

Under the provisions of the Leprosy Act, modern facilities for the diagnosis and treatment of leprosy are provided at Tracadie, N.B., for the small number of persons in Canada suffering from this disease.

Sick Mariners.—Under the authority of Part V of the Canada Shipping Act, the Department of National Health and Welfare provides prepaid health services for crew members of foreign-going ships arriving in Canada and Canadian coastal vessels in inter-provincial trade; crew members of Canadian fishing and government vessels may participate on an elective basis. Hospital care of crew members having residence in Canada is the responsibility of the provincial hospital insurance authority concerned.

Civil Aviation Medical Service.—Medical examiners are responsible for the standard of physical fitness of personnel flying civil aircraft.

Civil Service Health Counselling Service.—Formerly available chiefly to the public service in Ottawa, health counselling is now offered through major medical services units to federal employees throughout the country.

Subsection 5.—Medical Research and International Health

Medical Research.*—Medical research in Canada is carried on in universities and hospitals and by research institutes and government departments. Financial support for such research, provided by the federal and provincial governments, by private foundations and voluntary agencies and by the universities and hospitals themselves, assists in establishing research fellowships for training, in providing salaries to established investigators and in the awarding of grants in aid of research in the various disciplines of the medical sciences.

The Department of National Health and Welfare conducts intramural research related to its statutory functions and with the object of preserving and improving the health of Canadians. Within the Department, research is done in the laboratories or clinic services of the Health Services Directorate (particularly its Laboratory of Hygiene and Divisions of Occupational Health, Radiation Protection, Nutrition, and Epidemiology), of the Food and Drug Directorate, and of the Medical Services Directorate. In the Administration Branch, the Research and Statistics Division carries out special studies, including surveys, in social and medical economics. The Department of National Defence maintains well-equipped laboratories in which research is carried out concerned chiefly with raising the operating efficiency of the person working in the military environment. The Department of Veterans Affairs encourages research in its own hospitals, mainly in the fields of chronic illness such as arthritis, atherosclerosis, and metabolic, nutritional, neurological and mental disorders.

A great variety of medical problems are studied in medical school laboratories, hospitals and other medical institutes. In this area, funds from the federal treasury are provided through the Medical Research Council, the Department of National Health and Welfare and the Defence Research Board. The Medical Research Council has an interest in the broad field of the medical sciences and has an established policy with respect to the support of scientific personnel and to grants in aid of research. The former category involves awards to Medical Research Fellows who are in training, as well as to Medical Research Scholars and Medical Research Associates who are independent scientists, the first less senior than the second. The grants in aid of research involve assistance

* Prepared by Dr. J. Auer, Secretary, Medical Research Council, Ottawa.

covering the whole or part of the costs of investigations in the basic medical sciences, such as anatomy, physiology, pharmacology, biochemistry, bacteriology and pathology, as well as of investigations in the clinical sciences, including experimental medicine and surgery.

The Department of National Health and Welfare provides grants in aid of medical research sponsored by the provinces and conducted in universities, hospitals and other institutions from funds established under the National Health Grant Program (see p. 260). The Public Health Research Grant makes available about \$1,800,000 annually to assist in stimulating and developing public health research including studies on health services and on hospital administration. In addition, other grants in the areas of mental health, child and maternal health, general public health, and medical rehabilitation and crippled children amount to an approximate \$2,000,000 annually. This grant-providing program is guided by research sub-committees for various subjects, by a Research Advisory Committee of the Dominion Council of Health, and by conferring with representatives from provinces, from other federal agencies (the Medical Research Council, the Defence Research Board, and the Department of Veterans Affairs) and from voluntary groups such as the National Cancer Institute.

The Defence Research Board awards grants for research related to problems of importance for defence such as shock, preservation of blood, use of blood substitutes, effects of low temperature, etc.

Provincial branches of the Canadian Cancer Society and such government foundations as the Ontario Cancer Treatment and Research Foundation, and the Alcoholism and Drug Addiction Research Foundation give financial support for research in their fields in medical schools and hospitals. Fraternal societies and clubs such as the Rotary Club and private foundations like the J. P. Bickell Foundation, the Atkinson Charitable Foundation, the Muscular Dystrophy Association of Canada, the Canadian Life Insurance Officers Association, the Banting Research Foundation, the Multiple Sclerosis Society and pharmaceutical companies also contribute significantly to the support of medical research in Canada and, in addition, it should be mentioned that granting agencies in the United States give funds in aid of research to many investigators working in universities in Canada.

International Health.—Canada actively assists and co-operates with the World Health Organization and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Capital and technical assistance are provided to under-developed countries through the Colombo Plan and other bilateral aid programs. Health training is provided for a number of persons coming to Canada each year under the different technical co-operation schemes (see p. 148 and pp. 153-154). In this respect, during the year 1962 a total of 185 scholars and trainees in a wide range of health disciplines were in Canada under the External Aid Program commencing, continuing or completing their respective studies or observation courses. Some 36 additional applications were being processed or placement was pending at the year's end.

Canadian experts in health legislation and public health engineering undertook specific assignments abroad during the year and specialists in anaesthesiology, pathology and medical technology were provided for teaching and service in Ghana. A radiologist together with two additional anaesthesiologists were recruited for the staff of the developing medical school in Nigeria. By way of capital assistance, the provision of cobalt beam therapy units for centres in the Colombo Plan area was continued. By the end of 1962, 11 units had been shipped, five additional were on order, one new source had been shipped and one was on order.

At the sixteenth World Health Assembly in May, Canada was elected to name a person to serve for a three-year term on the Executive Board of the World Health Organization. Having been elected to the Executive Board of UNICEF by ECOSOC during the previous year, Canada's term of office on that body commenced at the beginning of the year and similarly extends over a three-year period.

To carry out Canada's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and necessary medical care for persons arriving in Canada who require quarantine (see p. 268).

The Department is responsible for the enforcement of requirements governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States as well as with problems caused by atmospheric pollution. Other international health responsibilities include the custody and distribution of biological, vitamin and hormone standards for the World Health Organization and certain duties in connection with the Commission on Narcotic Drugs of the United Nations.

Section 2.—Provincial and Local Health Services

Provincial and local health services may be grouped into several broad categories: general public health services, primarily of a preventive nature; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and rehabilitation services for disabled persons.

Subsection 1.—General Public Health Services

Provincial and local governments co-operate closely in providing community public health services. The autonomy of the provinces and their social, economic and geographic diversity make for some variety in legislative provisions, in financial arrangements and in the detailed division of functions between provincial health departments and local and voluntary agencies. Each province, however, offers all or nearly all of a basic range of public health services which includes environmental health, occupational health, communicable disease control, maternal and child health, dental health, nutrition, health education, and public health laboratories.

Environmental Health.—The control of factors in the environment that are harmful to physical health is a rapidly expanding area of public health activity. For many years, much of the work in this field was related to inspection duties long associated with community health sanitation, such as maintenance of pure milk, water and food supplies, supervision of plumbing and sewage disposal systems, and provision of general sanitary conditions in public areas. Increasing industrialization, however, has imposed new responsibilities calling for new techniques in public health engineering and sanitary services. Air pollution, water pollution and radiation are emerging as major environmental health problems, necessitating co-ordinated effort by governments and other agencies in research and in planning effective control measures.

Occupational Health.—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industry management. Provincial agencies regulate working conditions and offer consulting and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting health safety standards for employment.

Communicable Disease Control.—There are separate divisions of epidemiology or communicable disease control in six provinces; in the other provinces these functions are handled by provincial medical health officers. Local health authorities undertake case-finding and diagnostic services in co-operation with public health laboratories, carry out epidemiological investigations and often participate in tuberculosis and venereal disease control measures.

Through agreements with the Federal Government, all provincial health departments have made Salk vaccine available for free immunization of children and adults; similarly, in 1962, live oral poliovirus (Sabin) vaccine was used extensively in seven provinces. During 1959, the incidence of paralytic poliomyelitis rose in all provinces to its highest level since vaccination began but in 1960 it dropped by more than one half and in 1962 reached a record low. Very few who had received the prescribed number of inoculations contracted the disease.

Maternal and Child Health.—Most provincial health departments have Maternal and Child Health Divisions under medical direction or have made other administrative arrangements to provide consultant services in this field. In addition, six of the provinces have consultant nursing services within these divisions. Provincial divisions provide advisory services to local health departments and to hospitals, conduct studies of local problems and needs, and assist in the training of health personnel and in the administration of National Health Grants, including the Child and Maternal Health Grant.

Local health departments serving a very high proportion of the population carry out generalized public health programs, including the provision of maternal and child health services. The basic staff consists of a medical officer of health, public health nurses and sanitary inspectors. Programs and services for mothers and children may include prenatal education, home visiting, child health conferences and school health services. Other health personnel—dentists, nutritionists, health educators and social workers—share interests in the promotion of family health.

Dental Health.—All provincial health departments have dental health divisions which administer programs, varying under local conditions but directed almost entirely to health education and the care of children. Training of dentists and dental hygienists in public health, the operation of children's preventive and treatment clinics, and health education are being undertaken in all provinces. Water fluoridation projects involving a total of more than 1,780,000 people are in operation in seven provinces. Four provinces—Alberta, Manitoba, Ontario and Nova Scotia—have set up, in conjunction with their dental schools, special courses for dental hygienists. In all ten provinces clinical care is provided for children in remote rural areas. A successful locally sponsored plan in which the cost of dental services for children is shared by the local community and the provincial health department is in operation in more than 90 communities in British Columbia.

Nutrition.—Services include technical guidance, education, consultation and research. In some provinces, school lunch programs are sponsored and dietary supplements distributed. Five provinces have special nutrition divisions; in other provinces, consultants in nutrition come under a broader grouping of departmental services.

Health Education.—In most provinces a professional full-time 'health educator' is a member of the public health team. A basic concern of provincial health information services is to stimulate public interest in important health needs.

Public Health Laboratories.—The public health laboratory was one of the earliest provincial services developed to assist local public health departments in the protection of community health and the control of infectious diseases. New central and branch laboratories have been set up in recent years and the scope of services expanded beyond the routine, but necessary, bacteriological examination of water, milk and food samples. Clinical bacteriology and special pathological services, including medical testing for physicians and hospitals, are steadily increasing in volume. Efforts to co-ordinate public health and hospital laboratory services, special measures to bring laboratory facilities to rural areas, and devices to reduce the direct cost of clinical laboratory procedures to the individual are notable in the growth of public laboratory services.

Subsection 2.—Services for Specific Diseases or Disabilities

Each province has developed special programs to deal with health problems of particular severity and prevalence, many of which are chronic or long-term in nature. The services and facilities provided are generally similar across the country.

Mental Health.—Major developments in provincial mental health programs have included the expanding and modernizing of mental hospitals, the training of various kinds of psychiatric personnel, and the extension of community mental health services outside mental institutions. Assistance to patients in securing employment and in social adjustment following discharge from mental hospitals—a relatively new field of rehabilitation—is being promoted by voluntary groups and government agencies in several provinces.

With the exception of the municipally owned local institutions in Nova Scotia and hospitals in Quebec that operate under religious or lay auspices, most mental institutions are administered by provincial authorities. A great part of the cost is borne by the provincial governments, although a charge, according to ability to contribute, may be made for care in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba assumes a minimum maintenance cost for all patients; in Nova Scotia the provincial hospital gives free care to patients requiring active treatment; and in Ontario mental institution treatment is included in the hospital care insurance plan.

Most public mental institutions provide care and treatment for all types of mental illness; as facilities expand, it is becoming possible to segregate those under intensive treatment from those receiving long-term care. Some provinces maintain separate accommodation for certain categories of the mentally ill. For example, in British Columbia and Alberta, homes for the senile aged are an integral part of the mental institution system. Quebec has separate institutions for epileptics. Eight provinces operate schools for residential treatment and education of mentally defective persons and the maintenance of mentally retarded children in approved boarding or foster homes is receiving government support in a number of provinces. Local day classes, usually sponsored by organizations of parents, offer training opportunities for mentally deficient children in the community.

As the needs of patients are more fully understood and better methods of treatment develop, the daily routine of the mental patient is becoming less restrictive, as is shown by the increasing number of persons coming voluntarily for treatment. Custodial care and locked doors are giving way to open wards where patients may have unrestricted access to grounds and to occupational and recreational areas.

One of the greatest changes in the past decade has been in the extension of community mental health services outside mental institutions. General hospitals have expanded their psychiatric services in both in-patient and out-patient departments. About 50 general hospitals have organized units where psychiatric treatment is provided by professional staffs. Community clinics, where mental disorder may be treated at an early stage and guidance given to children and parents, play an important part in prevention and treatment within the home environment. Fostering this expansion of service are provincial health departments, municipalities or health units, mental institutions, general and allied special hospitals, school boards and voluntary organizations. Day and night care centres form part of the psychiatric service of two large general hospitals in Montreal and day care centres, admitting patients on a nine-to-five basis, are conducted in several other hospitals.

Tuberculosis.—The fight against tuberculosis is one of the major programs of all health departments. Free hospitalization and free drug treatment, both on an in-patient and domiciliary basis, is provided. In two provinces extensive BCG programs are in effect and in the other provinces this prophylactic is provided to groups at special risk. Special case-finding programs in the form of community tuberculin and X-ray surveys, surveys of high risk groups, and the follow-up of all arrested tuberculosis cases are routine. These

activities have resulted in a decline in the Canadian tuberculosis death rate of 82 p.c. since 1951. In 1960 the rate was 4.6 per 100,000. The number of beds set up in sanatoria declined from a peak of 18,977 in 1953 to 11,467 in 1961.

Cancer.—Health departments and lay and professional groups working for the control of cancer have been concerned mainly with four aspects of the problem—diagnosis, treatment, research and public education. In cancer detection and treatment, specialized medicine, hospital services and an expanding public health program are closely related. There are programs operating under health departments in four provinces; four others have provincially supported cancer agencies or commissions. These sponsor the work of diagnosis and treatment in special clinics, located usually within the larger general hospitals. Under the provincial hospital insurance plans, the benefits pertaining to in-patient care in the treatment of cancer are essentially similar in ten provinces and include such special services as diagnostic radiology, laboratory tests and radiotherapy. In at least five provinces these benefits apply also to out-patients. In others, the previous pattern of services to out-patients—that of assessing costs of treatment in relation to ability to pay—is still in effect. Comprehensive free medical programs for cancer patients are in operation in Saskatchewan and Alberta and for cancer in-patients in New Brunswick.

Veneral Disease.—Free diagnostic and treatment services are available in all provinces but the operation of government clinics is being increasingly superseded by the method of supplying free drugs to private physicians who are reimbursed for treatment of indigents on a fee-for-service basis.

Alcoholism.—Ontario, Manitoba, Alberta and British Columbia carry out research and education programs and operate centres for treatment, supported largely by public funds. Ontario, Saskatchewan and Alberta also have rehabilitation programs for alcoholic inmates of reform institutions. Recent legislation in Newfoundland, Nova Scotia and Quebec authorizes the setting up of similar agencies to initiate research and education studies in those provinces.

Other Diseases or Disabilities.—Services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia have been developed largely by voluntary agencies assisted by federal and provincial funds. A brief description of the programs of some of these agencies is given in the 1962 Year Book, pp. 270-274 (not carried in this edition), and in Subsection 4 on Services for the Disabled and Chronically Ill, pp. 275-276.

Subsection 3.—Public Medical Care

Saskatchewan operates a province-wide medical care insurance program (which came into effect on July 1, 1962), and in two other provinces public medical care programs are established for residents of particular areas. Approximately one half of the population of Newfoundland receives physicians' services at home or in hospital under the provincially administered Cottage Hospital Medical Care Plan which is financed in part on a premium basis. Medical indigents not under the plan may also receive care at provincial expense. In addition, all Newfoundland children under the age of 16 years are entitled to free medical and surgical care in hospital. In Manitoba, locally operated, municipal doctor programs, receiving provincial grants, cover about 28,000 persons. Similar programs covered about 158,000 persons in Saskatchewan prior to July 1962.

For several years the Provinces of Nova Scotia, Ontario, Saskatchewan, Alberta and British Columbia have financed the cost of providing health services for specified categories of persons in need and receiving regular public assistance. Manitoba began a comprehensive program in 1960. In some of these provinces the beneficiaries include persons in

receipt of means-tested old age security supplements, old age assistance, blindness and disability allowances, mothers' allowances and certain child welfare cases, and unemployed employables. Nova Scotia covers only mothers' allowance recipients and their dependants, and blindness allowance recipients. In Saskatchewan, old age assistance recipients (for health services other than hospital and medical care), disabled persons, blind persons not receiving a supplemental allowance, and persons on local relief (social aid) are the responsibility of the municipality of residence in regard to health services. The Manitoba program covers cases of need among the aged and infirm, including those in nursing homes or institutions, the blind and the physically or mentally disabled, mothers with custody of dependent children, and neglected children. Indigent persons not covered by these programs may have necessary care financed by the municipalities in which they reside.

Under the Ontario program, the principal medical service covered is physicians' care in the home and office, including certain minor surgical procedures and prenatal and post-natal care. Emergency drugs are a benefit and basic dental care is available to the children of mothers' allowance recipients. In addition to such medical services, Nova Scotia provides major and minor surgical and obstetrical services and medical attendance in hospital. The programs in Saskatchewan, Alberta and British Columbia give complete medical care in the home, office and hospital, including surgical and obstetrical services, all generally used prescription drugs (except in Alberta, and with a 50-p.c. co-charge limitation in Saskatchewan for non-life-saving drugs where financial hardship is not demonstrated), and dental and optical care, sometimes only on special authorization and/or with dollar limits. Prior to July 1, 1962, beneficiaries among the old age assistance group in Saskatchewan were entitled to insured hospital services only, but since that date they have been included under the medical care insurance plan of that province for insured services although personally exempt from premium payments. Services that are paid for in Manitoba include medical and surgical care in homes and doctors' offices, as well as optical and dental care, basic drugs, diagnostic tests, remedial care, appliances, and treatment including physiotherapy. Chiropody, chiropractic and emergency transportation may also be provided. Physicians are expected to offer care in hospital without charge, as in Ontario.

In Alberta, Saskatchewan, Manitoba and Nova Scotia, health services for eligible provincial public assistance recipients are wholly financed from provincial general revenues. In British Columbia, costs are shared on a 90-10 basis with the municipalities assuming their 10-p.c. share on a basis proportionate to population; in Ontario per capita contributions toward the cost of medical services for unemployed on relief are shared on an 80-20 basis with the municipality of residence.

Since July 1962, every person who has resided in the Province of Saskatchewan for three months (and is not entitled to receive medical services from the Government of Canada) and has paid, or has had paid on his behalf, any premium he is required to pay under the Saskatchewan Medical Insurance Act, is entitled to have payment made on his behalf from the Medical Care Insurance Fund, for medical, surgical and obstetrical care, without limit, in the office, home or hospital, from his physician of choice (including payment at specialists' rates for referred specialists' services). Out-of-province benefits are also paid, on a patient-reimbursement basis. There are no restrictions relating to age or pre-existing conditions, or other factors, except the requirement of three months' residence in the province. Physicians providing insured medical services may elect to receive payment in a number of ways: (1) they may contract for a salary or similar arrangement; (2) they may choose to receive direct payment from the administering public agency, the Medical Care Insurance Commission at 85 p.c. of the 1959 Schedule of Minimum Fees of the College of Physicians and Surgeons of Saskatchewan as payment in full; (3) they may bill their patients directly, the patient in turn being paid by the Commission, on presentation of an itemized account (bill) or receipt, an amount equal to 85 p.c. of the assessed fee; (4) the physician may practise for private fees, whereby the patient assumes all responsibility for payment of the doctor's fee

without any claim on the Commission. In addition, patients may enrol, voluntarily, with an approved health agency upon payment of a fee to cover administration costs. The agency is billed directly by the participating physician and the agency pays the physician, as payment in full, an amount equal to the amount paid to the agency by the Commission in respect of the physician's assessed account.

Municipal doctor plans formerly operating in Saskatchewan were discontinued with the introduction of the province-wide medical care insurance program but arrangements were being completed in the spring of 1963 to continue, under local auspices, insured medical services for some 57,000 residents of the Swift Current Health Region which has operated a prepaid medical-dental program for nearly 17 years.

The Saskatchewan medical care insurance program is financed from personal premiums plus general revenue contributions. No premiums were levied in respect of 1962 but an annual premium of \$12 per adult or a maximum annual premium of \$24 per family has been levied for 1963 for medical care coverage. Special corporation and personal income taxes have been introduced to help support the program, along with the use of a portion of revenues from a 5-p.c. retail sales tax.

Subsection 4.—Services for the Disabled and Chronically Ill

The success of rehabilitation programs for injured workers, war veterans, handicapped children and other disability groups such as the blind and tuberculous has encouraged recent efforts to extend rehabilitation services to all handicapped persons. Examples of the improved services for the disabled and chronically ill are the physical restoration facilities in hospitals and rehabilitation centres, the provincial vocational rehabilitation programs described in Part II, pp. 301-302, and the broader educational and vocational opportunities for handicapped children provided in special schools, classes and training centres. Increasing interest in the social problems created by disability and aging is being taken by the official and voluntary health and welfare agencies, many of which co-operate through social planning bodies at community, provincial and national levels.

Effective rehabilitation depends upon a broad range of services that should be available at the proper time to persons who need them. Based upon a system for case finding, assessment and follow-up, the continuum of organized rehabilitation services encompasses medical care including surgery, restorative services such as physical, occupational and speech therapy and prosthetic services, vocational evaluation, training and counselling, job placement and supportive health and social services.

General and chronic hospitals in the larger cities have set up departments of physical medicine and rehabilitation; many also operate out-patient clinics for various chronic diseases such as arthritis and rheumatism, diabetes, glaucoma, poor vision and deafness, and for orthopaedic and neurological conditions. Separate rehabilitation centres in each province serve the more seriously disabled who require long-term treatment or training to be restored to their usual activities. Among these are a number of special centres for injured workmen and handicapped children, and several for epileptics and paraplegics. Voluntary agencies concerned with specific disability groups including arthritics, the blind, the deaf, children suffering from cystic fibrosis or muscular dystrophy, the mentally ill or retarded, and other categories are also intensifying their rehabilitation efforts. Supportive services such as home care programs that provide therapy and house-keeping services, recreation for the handicapped, sheltered workshops and employment for the home-bound are provided by a growing number of agencies.

Efforts are being made to identify children with congenital anomalies, to develop an adequate system of registration of all handicapped children by locality as well as provincially, and to extend adequate treatment facilities and other services. Several provincial

health departments have set up handicapped children's registries and, in co-operation with the handicapped children's societies, they provide remedial treatment and education at children's hospitals, rehabilitation centres and special schools. The public school systems in the larger cities operate special classes for children with orthopaedic, vision, hearing and mental defects; voluntary agencies also sponsor special classes for the mentally retarded, cerebral palsied, emotionally disturbed and other groups. In addition, there are eight residential schools for the deaf and six for the blind, most of them administered by the provincial education departments.

In addition to its treatment responsibilities carried out on behalf of disabled Indians and Eskimos by the Medical Services Directorate, the Department of National Health and Welfare supports provincial rehabilitation activities through the National Health Grants designated for the extension of medical rehabilitation and crippled children's services and for rehabilitation of the mentally ill or deficient, the tuberculous and other chronically ill persons. In 1961-62, over 75 p.c. of the \$1,614,914 spent under the Medical Rehabilitation and Crippled Children Grant (see p. 261) was used to extend medical rehabilitation services in hospitals, rehabilitation centres and other facilities. Grant funds were also used for the professional training of medical rehabilitation personnel, for the support of seven schools of physiotherapy, occupational therapy, and audiology and speech therapy, and one school of social work, and for equipment and research.

Section 3.—Hospital and Other Health Statistics

Statistical information on the health of Canadians is at present limited to the well established and highly standardized mortality, communicable disease and institutional statistics series, all of which have been available for a long period, and the recently established series covering operations under the federal-provincial hospital insurance program (pp. 262-265). Another project deals with Civil Service illness. Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 239-242; those on hospital statistics in Subsection 1 following; and those on notifiable diseases and illness in the Civil Service in Subsection 2. A brief outline of the scope and methods of the Sickness Survey of 1950-51 is given in the 1955 Year Book and some of the results are published in the 1955, 1956 and 1957-58 editions. Details are available in bulletin form (Catalogue Nos. 82-501 to 82-511).

Subsection 1.—Hospital Statistics*

For statistical purposes, hospitals are classified in two ways—first by ownership, i.e., public, private or federal, and second by type, i.e., general, allied special (including chronic, convalescent, maternity, communicable diseases and orthopaedic hospitals), mental and tuberculosis.

In 1962 there were 1,376 hospitals of all types operating in Canada, having a rated bed capacity of 199,345 (excluding bassinets for newborn). Of the total, 1,027 were general hospitals with 103,551 beds, 217 were allied special hospitals with 17,382 beds, 83 were hospitals for mental patients with 67,739 beds, and 49 were tuberculosis sanatoria with 10,673 beds. It should be noted that a recent re-evaluation of facilities resulted in the removal from the list of "hospitals" of a number of institutions providing mainly custodial or domiciliary care.

* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: *Hospital Statistics, Vols. I to VI* (Catalogue Nos. 83-210 to 83-215); *Mental Health Statistics* (Catalogue No. 83-204) and *Financial Supplement* (No. 83-205); *Tuberculosis Statistics* (No. 83-206) and *Financial Supplement* (No. 83-207); and *List of Canadian Hospitals and Related Institutions and Facilities* (No. 83-201).

6.—Hospitals (Public, Private and Federal) Operating in Canada, by Province, 1962

Province or Territory and Category of Hospital	General	Allied Special	Mental ¹	Tuber- culosis ²	Total
	No.	No.	No.	No.	No.
Newfoundland—					
Public.....	40	2	1	2	45
Private.....	—	—	—	—	—
Federal.....	1	—	—	—	1
Prince Edward Island—					
Public.....	8	1	1	1	11
Private.....	—	—	—	—	—
Federal.....	—	—	—	—	—
Nova Scotia—					
Public.....	44	3	9	3	59
Private.....	2	—	—	—	2
Federal.....	4	—	—	—	4
New Brunswick—					
Public.....	35	5	2	4	46
Private.....	—	—	—	—	—
Federal.....	1	1	—	—	2
Quebec—					
Public.....	122	29	18	12	181
Private.....	45	83	—	1	129
Federal.....	9	2	—	—	11
Ontario—					
Public.....	185	25	22	12	244
Private.....	23	32	6	—	61
Federal.....	11	—	—	1	12
Manitoba—					
Public.....	75	4	4	3	86
Private.....	6	1	—	—	7
Federal.....	17	—	—	—	17
Saskatchewan—					
Public.....	153	3	4	2	162
Private.....	—	3	—	—	3
Federal.....	5	—	—	—	5
Alberta—					
Public.....	101	17	7	2	127
Private.....	—	—	—	—	—
Federal.....	8	—	—	1	9
British Columbia—					
Public.....	94	6	8	1	109
Private.....	5	—	1	—	6
Federal.....	4	—	—	3	7
Yukon and Northwest Territories—					
Public.....	10	—	—	1	11
Private.....	2	—	—	—	2
Federal.....	17	—	—	—	17
Canada—					
Public.....	867	95	76	43	1,081
Private.....	83	119	7	1	210
Federal.....	77	3	—	5	85

¹ Mental hospitals only; does not include psychiatric or mental units in other hospitals.² Tuberculosis

7.—Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada, by Province, as at Dec. 31, 1962

(Excluding bassinets)

Province or Territory and Category of Hospital	General		Allied Special		Mental		Tuberculosis		Totals	
	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Public.....	1,790	38.1	211	4.5	835	17.8	458	9.7	3,294	70.1
Private.....	—	—	—	—	—	—	—	—	35	0.7
Federal.....	35	0.7	—	—	—	—	—	—	—	—
Prince Edward Island—										
Public.....	726	68.5	30	2.8	377	35.6	100	9.4	1,233	116.3
Private.....	—	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—	—
Nova Scotia—										
Public.....	3,759	50.4	185	2.5	2,800	37.5	510	6.8	7,254	97.2
Private.....	16	0.2	—	—	—	—	—	—	16	0.2
Federal.....	621	8.3	—	—	—	—	—	—	621	8.3
New Brunswick—										
Public.....	3,206	52.8	242	4.0	1,450	23.9	564	9.3	5,462	90.0
Private.....	—	—	—	—	—	—	—	—	—	—
Federal.....	400	6.6	12	0.2	—	—	—	—	412	6.8
Quebec—										
Public.....	23,000	42.9	4,523	8.4	21,674	40.4	3,336	6.2	52,533	97.9
Private.....	991	1.8	2,361	4.4	—	—	25	0.1	3,377	6.3
Federal.....	1,060	2.0	1,206	2.2	—	—	—	—	2,266	4.2
Ontario—										
Public.....	31,629	49.9	4,387	6.9	22,028	34.7	2,659	4.2	60,703	95.7
Private.....	763	1.2	708	1.1	392	0.6	—	—	1,863	2.9
Federal.....	3,643	5.8	—	—	—	—	155	0.2	3,798	6.0
Manitoba—										
Public.....	4,698	50.3	1,128	12.1	3,575	38.2	508	5.4	9,909	106.0
Private.....	93	1.0	50	0.5	—	—	—	—	143	1.5
Federal.....	856	9.2	—	—	—	—	—	—	856	9.2
Saskatchewan—										
Public.....	6,332	68.1	515	5.5	3,491	37.5	306	3.3	10,644	114.4
Private.....	—	—	12	—	—	—	—	—	12	—
Federal.....	166	1.8	—	—	—	—	—	—	166	1.8
Alberta—										
Public.....	8,027	58.6	1,360	9.9	4,908	35.8	600	4.4	14,895	108.7
Private.....	—	—	—	—	—	—	500	3.7	1,076	7.9
Federal.....	576	4.2	—	—	—	—	—	—	—	—
British Columbia—										
Public.....	8,792	53.0	452	2.7	6,136	37.0	409	2.5	15,789	95.2
Private.....	76	0.5	—	—	73	0.4	—	—	149	0.9
Federal.....	1,575	9.5	—	—	—	—	510	3.1	2,085	12.6
Yukon and Northwest Territories—										
Public.....	401	102.8	—	—	—	—	33	8.5	434	111.3
Private.....	22	5.6	—	—	—	—	—	—	22	5.6
Federal.....	298	76.4	—	—	—	—	—	—	298	76.4
Canada—										
Public.....	92,360	49.8	13,033	7.0	67,274	36.2	9,483	5.1	182,150	98.1
Private.....	1,961	1.1	3,131	1.7	465	0.2	25	—	5,582	3.0
Federal.....	9,230	5.0	1,218	0.6	—	—	1,165	0.6	11,613	6.2

¹ Based on estimated population as at June 1, 1962.

Information on the number of hospitals operating in Canada and their bed capacities (Tables 6 and 7) was available for the year 1962 at the time of preparation of this Chapter, but the most recent figures on movement of patients, patient-days, hospital facilities and hospital finances (Tables 8 to 14) were for 1961.

Admissions to hospitals numbered almost 3,300,000 in 1961, or 18,079 per 100,000 population. The average number of patients in hospital on any one day during the year was 175,956, or one in every 104 persons in Canada.

8.—Movement of Patients¹ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1957-61

Type of Service and Item	1957	1958	1959	1960	1961
PUBLIC HOSPITALS					
General—					
Hospitals reporting.....No.	820	833	846	844	841
Percentage of operating hospitals reporting.....p.c.	98.4	98.2	98.9	99.1	98.2
Admissions ².....No.	2,875,400	2,764,214	2,844,352	2,935,067	3,012,219
Per 100,000 population....."	16,128	16,214	16,307	16,476	16,516
Discharges and deaths....."	2,673,034	2,760,932	2,840,916	2,934,925	3,008,708
Patients in hospital at Dec. 31....."	58,359	62,561	64,836	64,322	67,211
Per 100,000 population....."	352	367	372	361	368
Patient-days....."	24,910,797	25,752,916	26,914,286	27,862,783	28,767,928
Chronic and Convalescent—					
Hospitals reporting.....No.	51	63	66	49	58
Percentage of operating hospitals reporting.....p.c.	85.0	82.9	88.0	66.1	92.1
Admissions ².....No.	10,297	10,941	11,710	12,822	17,284
Per 100,000 population....."	62	64	67	72	95
Discharges and deaths....."	9,980	10,902	11,303	12,646	17,214
Patients in hospital at Dec. 31....."	7,898	9,131	9,895	7,977	8,740
Per 100,000 population....."	48	54	57	45	48
Patient-days....."	2,879,856	3,336,708	3,542,419	2,947,193	3,237,864
Maternity—					
Hospitals reporting.....No.	12	11	13	13	14
Percentage of operating hospitals reporting.....p.c.	92.3	78.6	100.0	92.9	100.0
Admissions ².....No.	25,695	24,114	43,429	43,749	46,435
Per 100,000 population....."	155	141	278	246	255
Discharges and deaths....."	25,716	24,118	48,344	43,783	46,368
Patients in hospital at Dec. 31....."	443	432	1,211	617	685
Per 100,000 population....."	3	3	7	4	4
Patient-days....."	189,290	174,652	327,938	277,588	287,199
Mental—³					
Hospitals reporting.....No.	72	71	69	67	72
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	100.0	95.7	90.0
Admissions ².....No.	26,133	27,238	29,840	28,582	34,990
Per 100,000 population....."	158	160	171	160	192
Discharges and deaths....."	24,821	26,172	28,144	27,506	34,883
Patients in hospital at Dec. 31....."	63,318	63,861	63,872	63,981	73,937
Per 100,000 population....."	382	375	367	359	405
Patient-days....."	23,393,648	23,942,562	24,049,237	24,199,750	24,646,914
Tuberculosis—⁴					
Hospitals reporting.....No.	54	51	50	52	50
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	100.0	98.1	100.0
Admissions ².....No.	15,075	13,352	12,571	12,561	12,891
Per 100,000 population....."	91	73	72	71	71
Discharges and deaths....."	18,160	15,674	13,777	13,577	14,069
Patients in hospital at Dec. 31....."	9,657	8,371	7,276	6,774	5,453
Per 100,000 population....."	58	49	42	38	30
Patient-days....."	3,887,198	3,413,428	3,131,830	2,978,494	2,617,612

For footnotes, see end of table, p. 281.

8.—Movement of Patients¹ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1957-61—continued

Type of Service and Item	1957	1958	1959	1960	1961
PUBLIC HOSPITALS—concluded					
Totals, Public Hospitals—⁵					
Hospitals reporting.....No.	1,020	1,044	1,059	1,044	1,047
Percentage of operating hospitals reporting.....p.c.	97.5	96.8	98.1	98.6	97.3
Admissions ².....No.	2,762,224	2,851,715	2,961,370	3,048,592	3,137,876
Per 100,000 population....."	16,651	16,728	16,978	17,113	17,205
Discharges and deaths....."	2,761,387	2,849,461	2,956,860	3,048,286	3,135,315
Patients in hospital at Dec. 31....."	140,564	145,864	148,640	145,188	156,769
Per 100,000 population....."	847	856	852	815	860
Patient-days....."	55,621,190	57,179,935	58,561,737	58,878,226	59,885,343
PRIVATE HOSPITALS					
General—					
Hospitals reporting.....No.	63	55	68	62	55
Percentage of operating hospitals reporting.....p.c.	80.8	73.3	73.1	72.9	63.9
Admissions ².....No.	47,747	53,139	61,010	56,959	55,874
Per 100,000 population....."	288	312	350	320	306
Discharges and deaths....."	47,665	52,935	61,009	56,968	55,780
Patients in hospital at Dec. 31....."	917	895	1,068	857	923
Per 100,000 population....."	6	5	6	5	5
Patient-days....."	378,235	342,934	480,024	397,396	408,625
Mental—³					
Hospitals reporting.....No.	5	5	5	6	7
Percentage of operating hospitals reporting.....p.c.	71.4	62.5	62.5	85.7	77.8
Admissions ².....No.	2,118	2,601	2,860	2,945	3,261
Per 100,000 population....."	13	15	16	17	18
Discharges and deaths....."	2,065	2,609	2,800	2,931	3,255
Patients in hospital at Dec. 31....."	427	327	371	379	456
Per 100,000 population....."	3	2	2	2	3
Patient-days....."	150,013	121,930	131,309	144,500	155,468
Totals, Private Hospitals—⁵					
Hospitals reporting.....No.	237	210	237	158	149
Percentage of operating hospitals reporting.....p.c.	78.7	77.5	70.5	79.0	69.6
Admissions ².....No.	75,210	78,365	93,580	88,594	77,398
Per 100,000 population....."	453	460	536	497	424
Discharges and deaths....."	74,927	77,959	93,145	88,366	77,030
Patients in hospital at Dec. 31....."	4,361	4,493	7,436	3,053	3,347
Per 100,000 population....."	26	26	43	17	18
Patient-days....."	1,635,949	1,640,880	1,822,793	1,226,456	1,276,314
FEDERAL HOSPITALS					
General—					
Hospitals reporting.....No.	35	33	44	69	65
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	77.2	84.1	85.5
Admissions ².....No.	74,327	74,766	80,083	83,436	80,106
Per 100,000 population....."	448	439	459	468	439
Discharges and deaths....."	74,486	74,962	80,136	83,814	80,067
Patients in hospital at Dec. 31....."	7,405	7,193	6,020	6,340	5,238
Per 100,000 population....."	45	42	35	36	29
Patient-days....."	3,098,808	2,986,536	2,552,222	2,785,781	2,270,859
Tuberculosis—⁴					
Hospitals reporting.....No.	6	5	5	6	5
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	100.0	100.0	100.0
Admissions ².....No.	750	694	503	699	1,033
Per 100,000 population....."	5	4	3	4	6
Discharges and deaths....."	1,006	950	645	764	1,026
Patients in hospital at Dec. 31....."	776	696	431	587	596
Per 100,000 population....."	5	4	2	3	3
Patient-days....."	319,636	297,798	287,392	376,673	343,026

For footnotes, see end of table.

8.—Movement of Patients¹ and Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1957-61—concluded

Type of Service and Item	1957	1958	1959	1960	1961
FEDERAL HOSPITALS—concluded					
Totals, Federal Hospitals—³					
Hospitals reporting.....No.	49	47	53	77	73
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	72.6	83.7	85.9
Admissions ².....No.	77,665	76,205	81,212	84,448	82,108
Per 100,000 population....."	468	447	466	474	450
Discharges and deaths....."	77,927	76,488	81,413	84,887	82,052
Patients in hospital at Dec. 31....."	8,713	8,477	7,805	7,072	7,030
Per 100,000 population....."	53	50	45	40	38
Patient-days....."	3,597,154	3,503,386	3,154,697	3,216,581	3,062,640
ALL HOSPITALS					
General—					
Hospitals reporting.....No.	918	921	958	975	961
Percentage of operating hospitals reporting.....p.c.	97.0	96.3	95.3	95.7	94.4
Admissions ².....No.	2,797,474	2,892,119	2,985,445	3,075,462	3,148,199
Per 100,000 population....."	16,863	16,965	17,116	17,264	17,261
Discharges and deaths....."	2,795,185	2,888,829	2,982,061	3,076,707	3,144,555
Patients in hospital at Dec. 31....."	66,681	70,649	71,924	71,619	73,372
Per 100,000 population....."	402	414	412	401	402
Patient-days....."	28,387,840	29,082,386	29,946,532	31,045,960	31,447,412
Mental—³					
Hospitals reporting.....No.	77	76	76	73	79
Percentage of operating hospitals reporting.....p.c.	97.5	96.2	96.2	94.8	88.8
Admissions ².....No.	28,251	29,839	33,146	31,527	38,251
Per 100,000 population....."	170	175	190	177	210
Discharges and deaths....."	26,886	28,781	31,418	30,437	38,138
Patients in hospital at Dec. 31....."	63,745	64,188	65,450	64,360	74,393
Per 100,000 population....."	384	377	376	361	408
Patient-days....."	23,543,661	24,064,492	24,631,582	24,344,250	24,802,382
Tuberculosis—⁴					
Hospitals reporting.....No.	60	56	55	58	55
Percentage of operating hospitals reporting.....p.c.	100.0	100.0	100.0	96.7	98.2
Admissions ².....No.	15,825	14,046	13,074	13,260	13,924
Per 100,000 population....."	95	82	75	74	76
Discharges and deaths....."	19,166	16,624	14,422	14,341	15,095
Patients in hospital at Dec. 31....."	10,433	9,067	7,707	7,361	6,049
Per 100,000 population....."	63	53	44	41	33
Patient-days....."	4,206,834	3,711,226	3,419,222	3,355,167	2,960,637
Totals, All Hospitals—⁵					
Hospitals reporting.....No.	1,306	1,301	1,349	1,279	1,269
Percentage of operating hospitals reporting.....p.c.	93.5	93.1	90.7	94.7	92.3
Admissions ².....No.	2,915,099	3,006,285	3,136,162	3,221,634	3,297,332
Per 100,000 population....."	17,572	17,634	17,951	18,085	18,079
Discharges and deaths....."	2,914,241	3,003,908	3,131,418	3,221,539	3,294,397
Patients in hospital at Dec. 31....."	153,638	158,834	163,881	155,313	167,146
Per 100,000 population....."	926	932	926	872	916
Patient-days....."	60,854,293	62,324,201	63,728,183	63,321,263	64,224,297

¹ Adults, children and newborn.
does not include psychiatric or mental units in other hospitals.

² First admissions and re-admissions.

³ Mental hospitals only; does not include tuberculosis units in other hospitals.

⁴ Tuberculosis hospitals only; does not include tuberculosis units in other hospitals.

⁵ Includes other types not specified.

Radiology and clinical laboratory facilities were available to patients in about 90 p.c. of the general hospitals in Canada in 1961 and electrocardiography and blood service were available in 76 p.c. and 64 p.c., respectively, of all general hospitals.

**9.—Percentages of Reporting Public General and Allied Special Hospitals
with Facilities Available, by Province, 1961**

Province or Territory and Type of Hospital	Radio- logy	Labo- ratory	Physio- therapy	Electro- cardio- graphy	Blood Service	Pre- natal	Mental Health
Newfoundland—							
General.....	74.4	71.8	10.3	35.9	12.8	—	—
Allied Special.....	50.0	50.0	100.0	50.0	—	—	—
Prince Edward Island—							
General.....	100.0	100.0	37.5	87.5	37.5	—	—
Allied Special.....	—	—	—	—	—	—	—
Nova Scotia—							
General.....	93.2	97.7	25.0	86.4	75.0	—	2.3
Allied Special.....	66.7	66.7	33.3	33.3	—	—	—
New Brunswick—							
General.....	88.6	82.9	20.0	74.3	68.6	2.9	—
Allied Special.....	—	25.0	75.0	—	25.0	—	—
Quebec—							
General.....	83.5	86.1	47.8	80.0	73.9	1.7	8.7
Allied Special.....	40.0	63.3	33.3	33.3	23.3	—	—
Ontario—							
General.....	97.9	88.8	49.2	84.5	78.1	0.5	3.2
Allied Special.....	50.0	66.7	83.3	45.8	25.0	—	8.3
Manitoba—							
General.....	69.3	73.3	13.3	61.3	36.0	—	2.7
Allied Special.....	100.0	100.0	66.7	100.0	100.0	—	—
Saskatchewan—							
General.....	98.7	98.0	18.5	68.2	58.3	—	2.0
Allied Special.....	—	100.0	33.3	33.3	—	—	—
Alberta—							
General.....	100.0	100.0	24.7	93.1	67.3	—	2.0
Allied Special.....	20.0	46.7	40.0	20.0	20.0	—	—
British Columbia—							
General.....	89.4	88.3	26.6	77.7	74.5	1.1	1.1
Allied Special.....	20.0	40.0	60.0	20.0	—	—	—
Yukon Territory—							
General.....	100.0	50.0	—	50.0	50.0	—	—
Northwest Territories—							
General.....	50.0	25.0	25.0	25.0	—	—	—
Canada—							
General.....	91.0	89.1	30.5	76.4	64.3	0.6	2.9
Allied Special.....	37.8	60.0	53.3	34.4	22.2	—	2.2

Average length of stay in general hospitals in 1961 was 10.0 days, slightly longer than in 1960. Length of stay tends to increase with the size of hospital because more specialized treatment is available in larger hospitals and because these hospitals therefore act as major referral centres.

10.—Average Length of Stay of Adults and Children in Public General and Allied Special Hospitals, by Province, 1961

Type of Hospital	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	days	days	days	days	days	days
General.....	13.8	10.0	9.8	9.5	10.2	10.5
1- 9 beds.....	—	7.8	7.2	6.8	5.8	5.7
10- 24 ".....	3.6	6.7	7.2	7.4	7.2	7.8
25- 49 ".....	—	8.0	8.1	7.3	6.4	8.8
50- 99 ".....	—	7.2	9.7	8.0	8.0	9.9
100-199 ".....	9.7	10.9	9.2	8.9	8.7	8.9
200-299 ".....	—	10.3	10.7	9.9	9.7	10.2
300-499 ".....	27.5	—	—	—	10.3	10.6
500-999 ".....	—	—	13.0	15.8	13.4	11.7
1,000 or more beds.....	—	—	—	—	13.8	14.6
Allied Special—						
Chronic.....	173.7	—	—	—	220.5	364.3
Convalescent.....	—	—	32.9	31.3	41.3	44.9
Maternity.....	—	—	5.7	10.0	5.5	6.3
Other.....	75.7	136.2	—	40.6	23.0	16.0
Totals, All Hospitals.....	14.9	10.4	9.8	9.9	11.6	11.8
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	Canada
	days	days	days	days	days	days
General.....	8.9	9.7	9.1	9.9	7.0	10.0
1- 9 beds.....	8.1	7.4	5.3	3.8	5.4	7.0
10- 24 ".....	7.0	7.4	7.0	7.4	6.9	7.2
25- 49 ".....	6.8	7.8	6.7	7.6	7.5	7.5
50- 99 ".....	8.4	8.2	8.0	8.3	—	8.7
100-199 ".....	9.0	9.9	8.9	9.1	—	9.0
200-299 ".....	8.0	13.5	9.1	8.7	—	10.0
300-499 ".....	9.0	12.0	9.6	11.0	—	10.8
500-999 ".....	11.6	13.8	10.2	11.3	—	12.2
1,000 or more beds.....	—	—	16.2	14.6	—	14.6
Allied Special—						
Chronic.....	122.0	222.4	476.3	102.6	—	241.2
Convalescent.....	—	—	—	39.6	—	40.1
Maternity.....	—	—	5.6	6.7	—	6.0
Other.....	—	—	13.0	269.5	—	22.9
Totals, All Hospitals.....	11.1	10.4	9.9	10.1	7.0	11.1

The 987 public hospitals reporting financial data for 1961 spent a total of \$841,245,000 in that year and had revenues amounting to \$811,427,000 (see footnote 1, Table 11). The 987 hospitals represented 92 p.c. of those required to submit financial data and they contained 96 p.c. of the beds in the public hospitals of Canada. Of the total expenditure, salaries and wages accounted for 64.7 p.c. and medical and surgical supplies and drugs for 7.7 p.c. Of the total revenue, 78.2 p.c. was in-patient earnings.

11.—Revenues and Expenditures of Reporting Public Hospitals, by Type, 1960 and 1961

Year and Type of Hospital	Hospitals Reporting	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	p.c.	p.c.	p.c.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
1960										
General.....	798	86.9	5.0	8.1	530,085	63.5	3.5	4.7	28.3	555,814
1- 9 beds....	52	83.4	3.9	12.7	1,961	59.8	2.9	4.9	32.4	2,034
10- 24 "....	225	87.1	4.2	8.7	16,164	57.2	3.3	5.4	34.1	17,123
25- 49 "....	182	87.9	4.8	7.3	30,845	59.8	3.4	5.0	31.8	32,425
50- 99 "....	114	89.6	3.6	6.8	39,133	61.7	3.0	4.9	30.4	41,114
100-199 "....	119	87.7	5.5	6.8	99,807	69.5	3.4	4.7	28.4	103,312
200-299 "....	37	86.2	4.6	9.2	55,322	68.6	3.3	4.5	29.7	57,677
300-499 "....	39	87.2	4.9	7.9	106,081	65.8	3.6	4.6	26.0	110,710
500-999 "....	24	85.9	5.4	8.7	123,577	63.9	3.8	4.5	27.8	129,985
1,000 or more beds	6	85.2	4.8	10.0	57,197	64.7	3.7	4.5	27.1	61,433
Allied Special—										
Chronic.....	38	94.1	0.2	5.7	21,787	65.9	0.9	2.5	30.7	22,085
Convalescent....	7	91.5	0.2	8.3	2,216	61.3	1.4	2.1	35.2	2,279
Maternity.....	9	89.4	0.5	10.1	3,839	64.5	4.2	2.6	28.7	4,011
Other.....	13	64.9	4.3	30.8	8,165	60.4	1.9	2.4	35.3	8,653
Mental.....	63	32.9	0.1	67.0	116,700	64.6	0.7	2.7	32.0	116,585
Tuberculosis.....	52	73.6	0.5	25.9	31,080	61.0	1.6	1.8	35.5	31,900
Totals, 1960...	980	77.5	3.8	18.7	713,873	63.6	2.9	4.1	29.4	741,327
1961										
General.....	793	87.9	4.8	7.3	611,815	64.7	3.3	4.4	27.6	636,205
1- 9 beds....	43	83.0	4.0	8.0	1,993	61.9	2.6	4.9	30.6	2,027
10- 24 "....	198	87.8	4.3	7.9	15,377	58.5	3.0	5.1	33.4	16,515
25- 49 "....	192	89.0	4.6	6.4	33,767	60.8	3.0	4.7	31.5	35,402
50- 99 "....	126	90.4	3.9	5.7	48,483	63.9	2.9	4.4	28.8	50,458
100-199 "....	118	89.1	5.0	5.9	108,200	64.9	3.3	4.6	27.2	112,268
200-299 "....	45	87.2	4.7	8.1	73,777	65.3	3.3	4.4	29.0	76,291
300-499 "....	40	88.6	5.0	6.4	117,370	66.4	3.4	4.4	25.8	121,584
500-999 "....	25	86.3	5.0	8.7	147,032	65.3	3.4	4.3	27.0	152,890
1,000 or more beds	6	86.5	4.5	9.0	65,885	65.4	3.5	4.2	26.9	68,771
Allied Special—										
Chronic.....	42	93.8	0.2	6.0	25,271	67.1	1.0	2.5	29.4	26,253
Convalescent....	10	84.2	4.8	11.0	3,633	63.3	1.8	2.0	32.9	3,652
Maternity.....	14	92.4	1.2	6.4	4,689	65.3	4.1	2.6	28.0	4,743
Other.....	9	67.2	4.9	27.9	7,513	59.1	1.6	2.4	36.9	8,152
Mental.....	72	20.5	—	79.5	130,303	65.3	0.5	2.1	32.1	132,206
Tuberculosis.....	47	74.2	0.5	25.3	28,202	63.4	1.3	1.9	33.4	30,034
Totals, 1961...	987	78.2	3.8	15.0	811,427	64.7	2.7	3.9	28.7	841,245

¹ Subject to later adjustments by Provincial Plan.

12.—Revenues and Expenditures of Reporting General Public Hospitals, by Province, 1961

Province or Territory	Hospitals Reporting	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	p.c.	p.c.	p.c.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
Newfoundland.....	27	83.0	7.3	9.7	9,942	54.9	3.4	5.9	35.8	10,460
Prince Edward Island.....	8	76.3	6.2	17.5	2,794	54.1	3.3	4.3	38.3	3,015
Nova Scotia.....	44	85.9	6.7	7.4	23,469	59.7	3.5	4.2	32.6	23,672
New Brunswick.....	33	80.7	3.7	15.6	21,970	57.3	3.4	4.2	35.1	22,645
Quebec.....	105	85.9	5.9	8.2	143,076	61.9	3.2	4.9	30.0	151,049
Ontario.....	169	89.0	5.1	5.9	236,475	66.9	3.4	4.2	25.5	238,646
Manitoba.....	74	90.8	2.9	6.3	31,226	66.4	3.2	4.1	26.4	39,978
Saskatchewan.....	143	90.8	3.3	5.9	38,773	66.5	3.0	4.9	25.5	31,696
Alberta.....	100	87.5	3.3	9.2	44,457	64.7	3.4	4.2	27.7	47,434
British Columbia.....	86	90.0	3.2	6.8	59,208	67.9	3.2	4.1	24.8	62,134
Yukon Territory.....	2	86.1	7.2	6.7	155	55.1	1.6	5.7	37.6	166
Northwest Territories.....	2	84.0	9.3	6.7	269	52.0	2.4	4.8	40.8	308
Canada.....	793	87.9	4.8	7.3	611,815	64.7	3.3	4.4	27.6	636,295

¹ Subject to later adjustments by Provincial Plan.

Patient-day cost in general hospitals in 1961 was \$24.32, an amount 6.9 p.c. higher than in 1960. In such hospitals, per diem cost usually rises with the size of hospital; in hospitals with one to nine beds the patient-day cost was \$19.94 compared with \$30.09 in hospitals with 1,000 or more beds.

13.—Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), 1960 and 1961

Year and Type of Hospital	Hospitals Reporting	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
1960										
General.....	798	18.85	1.08	1.77	21.70	14.45	0.80	1.06	6.44	22.75
1-9 beds.....	52	16.34	0.76	2.48	19.58	12.15	0.58	1.00	6.58	20.31
10-24 ".....	225	14.15	0.68	1.41	16.24	9.83	0.58	0.92	5.87	17.20
25-49 ".....	182	14.60	0.80	1.22	16.62	10.45	0.59	0.87	5.56	17.47
50-99 ".....	114	15.29	0.62	1.16	17.07	11.07	0.54	0.88	5.44	17.93
100-199 ".....	119	17.59	1.11	1.36	20.06	13.20	0.70	0.98	5.89	20.77
200-299 ".....	37	18.64	0.98	1.99	21.61	14.08	0.74	1.02	6.70	22.59
300-499 ".....	39	21.24	1.20	1.93	24.37	16.72	0.92	1.17	6.62	25.42
500-999 ".....	24	20.61	1.30	2.09	24.00	16.12	0.95	1.14	7.01	25.23
1,000 or more beds	6	22.71	1.28	2.67	26.66	18.54	1.05	1.29	7.75	28.64
Allied Special—										
Chronic.....	38	7.85	0.01	0.47	8.33	5.58	0.08	0.21	2.59	8.46
Convalescent.....	7	9.56	0.02	0.86	10.44	6.58	0.15	0.23	3.78	10.74
Maternity.....	9	22.90	0.13	2.58	25.61	17.27	1.12	0.70	7.67	26.76
Other.....	13	13.11	0.86	6.22	20.19	12.92	0.40	0.51	7.57	21.39
Mental.....	63	1.63	--	3.32	4.95	3.24	0.03	0.14	1.51	4.94
Tuberculosis.....	52	7.52	--	2.62	10.14	6.69	0.17	0.18	3.37	10.41

¹ Subject to later adjustments by Provincial Plan.

13.—Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), 1960 and 1961—concluded

Year and Type of Hospital	Hospitals Reporting	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
1961										
General.....	793	20.55	1.12	1.69	23.36	15.74	0.80	1.07	6.71	24.32
1- 9 beds....	43	16.65	0.76	1.51	18.92	12.34	0.52	0.98	6.11	19.94
10- 24 "....	198	15.12	0.74	1.37	17.23	10.83	0.56	0.96	6.19	18.60
25- 49 "....	192	16.14	0.84	1.16	18.14	11.67	0.53	0.90	6.00	19.02
50- 99 "....	186	16.90	0.72	1.07	18.69	12.48	0.57	0.87	5.64	19.53
100-199 "....	118	19.01	1.07	1.24	21.32	14.35	0.73	1.02	6.03	22.13
200-299 "....	45	21.06	1.13	1.96	24.15	15.80	0.82	1.10	7.25	24.98
300-499 "....	40	21.63	1.22	1.42	24.27	16.80	0.86	1.10	6.46	25.21
500-999 "....	25	23.15	1.34	2.33	26.82	18.22	0.95	1.20	7.52	27.89
1,000 or more beds	6	24.94	1.28	2.61	28.83	19.68	1.06	1.26	8.09	30.09
Allied Special—										
Chronic.....	42	9.19	0.02	0.59	9.80	6.83	0.10	0.25	3.00	10.18
Convalescent....	10	13.37	0.76	1.75	15.88	10.11	0.28	0.32	5.25	15.96
Maternity.....	14	24.74	0.32	1.72	26.78	17.68	1.11	0.70	7.58	27.08
Other.....	9	18.40	1.33	7.66	27.39	17.60	0.48	0.71	10.94	29.72
Mental.....	72	1.27	--	4.94	6.21	4.23	0.04	0.16	1.78	6.21
Tuberculosis.....	47	8.50	0.06	2.90	11.45	7.74	0.16	0.22	4.07	12.20

¹ Subject to later adjustments by Provincial Plan.

14.—Revenues and Expenditures of Reporting Public Hospitals per Patient-Day (excluding Newborn), by Province, 1961

Province and Type of Hospital	Hospitals Reporting	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
Newfoundland—										
General.....	27	15.72	1.38	1.84	18.94	10.93	0.68	1.13	7.13	19.92
Mental.....	1	0.31	--	7.88	8.19	4.59	0.30	0.05	3.24	8.19
Tuberculosis.....	2	0.27	--	13.31	13.59	8.60	0.49	0.25	4.25	13.59
Prince Edward Island—										
General.....	8	13.48	1.10	3.08	17.66	10.31	0.62	0.83	7.30	19.06
Mental.....	1	0.64	--	4.26	4.90	2.63	0.03	0.22	2.03	4.90
Tuberculosis.....	1	11.33	0.38	0.65	12.38	6.43	0.34	0.21	5.40	12.38
Nova Scotia—										
General.....	44	20.10	1.58	1.72	23.40	14.10	0.82	1.00	7.69	23.61
Allied Special—										
Convalescent....	2	15.95	4.60	3.48	24.03	14.25	0.64	0.45	8.86	24.19
Maternity.....	1	22.80	0.23	1.74	24.77	15.00	1.07	0.69	7.64	24.39
Mental.....	9	2.11	--	3.62	5.73	3.44	0.01	0.13	2.00	5.58
Tuberculosis.....	3	7.69	0.04	10.10	17.82	12.14	0.14	0.31	5.23	17.82
New Brunswick—										
General.....	33	18.78	0.86	3.61	23.25	13.73	0.81	1.00	8.43	23.97
Allied Special—										
Convalescent....	2	17.10	0.37	0.50	17.97	10.76	0.86	0.86	5.72	18.21
Maternity.....	1	24.12	--	8.03	32.15	15.50	0.84	0.21	19.07	35.63
Other.....	1	13.71	2.57	0.52	16.80	--	--	--	--	17.33

¹ Subject to later adjustments by Provincial Plan.

**14.—Revenues and Expenditures of Reporting Public Hospitals per Patient-Day
(excluding Newborn), by Province, 1961—concluded**

Province or Territory and Type of Hospital	Hospitals Reporting	Revenues				Expenditures				
		Net In- patient Earnings	Net Out- patient Earnings	Grants and Other Income	Total ¹	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
New Brunswick—										
concluded										
Mental.....	2	0.75	—	3.96	4.71	2.84	0.05	0.15	1.67	4.71
Tuberculosis.....	4	13.49	0.01	0.73	14.24	9.45	0.10	0.22	5.34	15.10
Quebec—										
General.....	105	19.85	1.35	1.83	23.03	15.68	0.82	1.24	7.52	25.26
Allied Special—										
Chronic.....	12	6.45	--	0.46	6.91	4.44	0.07	0.26	2.76	7.54
Convalescent....	1	10.55	—	0.75	11.30	6.93	0.02	0.14	4.23	11.33
Maternity.....	7	19.92	0.83	1.68	22.43	14.16	0.72	1.01	7.70	23.59
Other.....	5	18.21	0.53	2.03	20.77	15.18	0.46	0.74	6.31	22.69
Mental.....	15	--	--	--	3.05	--	--	--	--	3.34
Tuberculosis.....	11	4.89	0.04	1.60	6.53	4.70	0.08	0.23	3.54	8.55
Ontario—										
General.....	169	22.80	1.29	1.53	25.62	17.30	0.88	1.10	6.57	25.85
Allied Special—										
Chronic.....	16	10.42	--	0.66	11.08	7.70	0.09	0.23	3.12	11.14
Convalescent....	4	12.23	0.04	0.61	12.88	8.31	0.14	0.19	4.03	12.69
Maternity.....	2	29.51	0.18	1.52	31.21	20.45	1.59	0.49	8.31	30.85
Other.....	1	32.38	7.02	58.49	97.89	45.48	0.76	1.59	50.66	104.50
Mental.....	22	0.07	—	6.19	6.26	4.44	0.05	0.13	1.63	6.26
Tuberculosis.....	12	10.50	0.12	1.85	12.48	8.26	0.13	0.18	4.21	12.78
Manitoba—										
General.....	74	21.18	0.67	1.48	23.33	15.71	0.77	1.17	6.03	23.68
Allied Special—										
Chronic.....	3	12.90	0.14	0.74	13.78	10.50	0.20	0.38	3.12	14.20
Mental.....	4	1.56	—	2.98	4.54	3.12	0.02	0.15	1.21	4.51
Tuberculosis.....	3	9.69	0.01	1.50	11.21	6.66	0.16	0.20	3.88	10.89
Saskatchewan—										
General.....	143	18.64	0.67	1.21	20.52	14.07	0.63	0.88	5.58	21.16
Mental.....	4	0.34	—	6.03	6.38	4.62	0.04	0.10	1.62	6.37
Tuberculosis.....	3	7.52	—	8.87	16.39	10.60	0.12	0.23	3.77	14.72
Alberta—										
General.....	100	17.37	0.66	1.82	19.85	13.70	0.73	0.89	5.84	21.17
Allied Special—										
Chronic.....	10	7.29	--	0.62	7.91	5.56	0.10	0.21	3.07	8.95
Maternity.....	2	24.90	0.08	4.52	29.50	19.60	1.20	0.56	7.68	29.05
Other.....	1	15.84	0.77	1.07	17.68	13.86	0.52	0.44	2.91	17.73
Mental.....	6	0.55	—	6.25	6.79	4.84	--	0.18	1.78	6.82
Tuberculosis.....	2	17.86	0.01	1.62	19.49	13.28	0.24	0.15	4.25	17.92
British Columbia—										
General.....	86	20.23	0.71	1.53	22.47	16.01	0.75	0.97	5.85	23.58
Allied Special—										
Chronic.....	1	8.79	0.02	0.11	8.92	6.99	0.02	0.13	2.42	9.57
Convalescent....	1	17.47	3.82	14.61	35.90	26.01	0.17	0.25	11.52	37.94
Maternity.....	1	24.88	—	0.59	25.47	19.31	0.69	0.80	5.76	26.57
Other.....	1	7.84	0.12	4.72	12.68	12.65	0.11	0.12	6.06	18.93
Mental.....	8	6.72	—	0.18	6.90	4.15	--	0.28	2.46	6.90
Tuberculosis.....	2	17.70	—	—	17.70	12.95	0.55	0.26	3.95	17.70
Yukon Territory—										
General.....	2	23.73	2.00	1.85	27.58	16.22	0.47	1.67	11.07	29.43
Northwest Territories—										
General.....	2	23.66	2.56	1.92	28.14	16.74	0.78	1.54	13.15	32.21
Tuberculosis.....	4	8.48	0.31	1.38	10.14	8.37	0.15	0.33	5.31	14.16

¹ Subject to later adjustments by Provincial Plan.

Diagnoses of Patients in Institutions for Psychiatric Disorders and for Tuberculosis.—Tables 15 and 16 summarize the most recent data available on diagnosis according to sex and age group of in-patients in psychiatric institutions and tuberculosis hospitals, including those in psychiatric wards and tuberculosis wards of other hospitals.

Of the total of 76,486 psychiatric patients reported at Dec. 31, 1961, 35 p.c. suffered from schizophrenia, the most frequent form of psychosis (insanity); 26 p.c. suffered from other forms of psychosis and 29 p.c. were mentally deficient. In most diagnostic classes, males outnumbered females; exceptions were certain psychoses, neuroses and drug addiction.

15.—Diagnoses of In-patients on the Books of Psychiatric Institutions, by Age Group and Sex, Dec. 31, 1961

NOTE.—Data from 111 institutions, including psychiatric wards of general hospitals; at Dec. 31, 1961, 10 p.c. of the patients on the books were on probation pending official release.

Diagnoses	Age Group						All Ages ¹		
	0-9	10-14	15-19	20-39	40-59	60+	Males	Females	Total
NUMBERS									
All Psychoses (excl. alcoholic)....	51	91	526	10,062	18,090	16,595	23,840	21,632	45,472
Functional ²	36	63	439	8,774	14,977	9,885	18,036	16,188	34,224
Of old age.....	—	—	—	5	102	4,705	2,180	2,655	4,835
Other.....	15	23	87	1,283	3,011	2,005	3,624	2,809	6,433
Neuroses ³	3	10	77	774	863	470	761	1,438	2,199
Depression.....	—	—	35	366	388	242	367	675	1,032
Anxiety.....	—	2	9	141	89	41	128	155	283
All Other ³	2,736	3,508	3,923	9,596	6,266	2,765	16,264	12,551	28,815
Mental deficiency.....	2,520	3,178	3,597	7,640	4,189	1,382	12,354	9,971	22,325
Alcoholism (incl. psychotics)....	—	—	2	297	954	529	1,395	367	1,762
Epilepsy.....	140	187	223	774	467	150	1,013	929	1,942
Totals.....	2,790	3,609	4,526	20,432	25,219	19,830	40,865	35,621	76,486
RATES PER 100,000 POPULATION									
All Psychoses (excl. alcoholic)....	1	5	36	202	483	831	256	237	247
Functional ²	1	4	30	176	400	495	194	178	186
Of old age.....	—	—	—	—	3	236	23	29	26
Other.....	—	1	6	26	80	100	39	31	35
Neuroses ³	—	1	5	16	23	24	8	16	12
Depression.....	—	—	2	7	10	12	4	7	6
Anxiety.....	—	—	1	3	2	2	1	2	2
All Other ³	62	187	271	192	167	139	175	138	156
Mental deficiency.....	53	169	235	153	112	69	153	109	121
Alcoholism (incl. psychotics)....	—	—	—	6	25	27	15	4	10
Epilepsy.....	3	10	15	16	12	8	11	10	11
Totals.....	64	192	313	410	674	993	439	391	415

¹ Includes ages not stated.
² Includes other diagnoses not specified below.

³ Comprises schizophrenia, manic depressive psychosis, involutional melancholia, paranoia and paranoid states.

Of the 5,387 patients with respiratory tuberculosis on the books of tuberculosis institutions at the end of 1961, 63 p.c. were males. Males outnumbered females in all age groups except for the ages from 0 to 19 years. The peak frequency for men (1,116) occurred in the 40-59 age group, and for women (688) in the 20-39 age group. The male rate rose steadily up to 60 years while the female rate, following somewhat the same pattern, showed a decline in age group 40-59. The over-40 male rates were much higher than those for the younger male age groups.

16.—Diagnoses of Patients on the Books of Reporting Tuberculosis Hospitals, by Age Group and Sex, as at Dec. 31, 1961

NOTE.—Figures include patients in 66 tuberculosis hospitals and patients in tuberculosis units in general hospitals but exclude tubercular patients in mental hospitals.

Diagnosis	Age Group					Total ¹
	0-14	15-19	20-39	40-59	60 +	
NUMBERS						
Respiratory tuberculosis.....M.	336	126	788	1,116	1,003	3,379
F.	346	143	688	475	353	2,008
With occupational disease of lung.....M.	1	—	—	30	31	62
F.	—	—	—	—	1	1
Minimal pulmonary.....M.	28	34	146	144	107	462
F.	54	46	176	94	49	420
Moderately advanced pulmonary.....M.	18	51	307	425	380	1,183
F.	22	59	281	191	158	711
Far advanced pulmonary.....M.	7	24	304	492	456	1,288
F.	9	20	205	185	140	561
Other and unspecified pulmonary.....M.	10	5	6	6	12	39
F.	16	2	6	1	1	26
Pleurisy with or without effusion.....M.	14	7	24	19	15	79
F.	8	7	16	4	4	39
Primary infection.....M.	251	4	—	—	1	256
F.	219	8	2	—	—	229
Other.....M.	7	1	1	—	1	10
F.	18	1	2	—	—	21
Tuberculosis, other forms.....M.	48	19	80	58	39	244
F.	56	24	60	39	22	202
RATES PER 100,000 POPULATION						
Respiratory tuberculosis.....M.	10.5	17.1	31.4	58.8	103.7	36.4
F.	11.3	19.9	27.6	25.8	34.1	22.0
With occupational disease of lung.....M.	—	—	—	1.6	3.2	0.7
F.	—	—	—	—	0.1	—
Minimal pulmonary.....M.	0.9	4.6	5.8	7.6	11.1	5.0
F.	1.8	6.4	7.1	5.1	4.7	4.6
Moderately advanced pulmonary.....M.	0.6	6.9	12.2	22.4	39.3	12.7
F.	0.7	8.2	11.3	10.4	15.3	7.8
Far advanced pulmonary.....M.	0.2	3.3	12.1	25.9	47.1	13.9
F.	0.3	2.8	8.2	10.0	13.5	6.1
Other and unspecified pulmonary.....M.	0.3	0.7	0.2	0.3	1.2	0.4
F.	0.5	0.3	0.2	0.1	0.1	0.3
Pleurisy with or without effusion.....M.	0.4	0.9	1.0	1.0	1.6	0.9
F.	0.3	1.0	0.6	0.2	0.4	0.4
Primary infection.....M.	7.9	0.5	—	—	0.1	2.8
F.	7.2	1.1	0.1	—	—	2.5
Other.....M.	0.2	0.1	—	—	0.1	0.1
F.	0.6	0.1	0.1	—	—	0.2
Tuberculosis, other forms.....M.	1.5	2.6	3.2	3.1	4.0	2.6
F.	1.8	3.3	2.4	2.1	2.1	2.2

¹ Includes ages not known.

Subsection 2.—Notifiable Diseases and Other Health Statistics*

In addition to the administrative, or non-morbidity, type of hospital statistics dealt with on pp. 276-287, health statistics collected nationally include series on notifiable diseases and illness among federal civil servants; these are dealt with briefly below.

Notifiable Diseases.—In terms of number of new cases, the major infectious diseases reportable on a national basis were, in 1961, the venereal diseases, scarlet fever and streptococcal sore throat, and infectious and serum hepatitis.

Higher incidence of the reportable venereal diseases (combined) occurred in the Yukon and the Northwest Territories and in all provinces except Newfoundland, Nova Scotia

* Prepared in the Public Health Section, Health and Welfare Division, Dominion Bureau of Statistics.

and New Brunswick. In Newfoundland the level of venereal infections was the lowest since that province entered Confederation—283 cases, or a case-rate of 61.8 per 100,000 population. The largest number of cases (3,880) occurred in British Columbia, but the rate per 100,000 population in that province (238.2) was lower than those of the Yukon, the Northwest Territories and Manitoba. Among the reportable types of venereal disease, gonorrhoea accounted for 87.7 p.c. of total cases nationally, and for 94.5 p.c. of cases in British Columbia.

Although the incidence of scarlet fever and streptococcal sore throat continued at a high level relative to other notifiable diseases, the 12,765 cases reported in 1961 represented a 40.0 p.c. decline from the 1960 total. The decrease in cases was common to all provinces and most marked, in percentage terms, in Quebec. Provincially, the highest case-rate was Prince Edward Island's 1,284.8, which was more than 17 times the national average of 70.0 cases per 100,000 population.

The number of cases of infectious and serum hepatitis increased from 6,314 in 1960 to 12,381 in 1961. Higher incidence in comparison with the previous year was recorded in every four-week period of 1961, and all provinces were affected to a greater or lesser degree.

From a 1960 record high of 3,279 cases, the incidence of dysentery declined in 1961 by 6.9 p.c. to 3,053 cases. The latter were fairly evenly divided between bacillary dysentery and the miscellaneous classification, which covers such conditions as dysenteric diarrhoea and haemorrhagic dysentery. Only 12 cases of amoebic dysentery, a fairly uncommon form, were reported.

A nation-wide decline in the incidence of paralytic poliomyelitis was also noted in 1961. The numbers of cases (189) and the rate per 100,000 population (1.0) approximated the previous low levels established in 1957.

17.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, 1958-61

International List No.	Disease	Cases				Rates per 100,000 Population			
		1958 ¹	1959 ¹	1960 ²	1961 ²	1958 ¹	1959 ¹	1960 ²	1961 ²
		No.	No.	No.	No.				
044	Brucellosis (undulant fever)...	113	120	142	109	0.7	0.8	0.9	0.6
764	Diarrhoea of the newborn, epidemic.....	66	92	72	81	0.4	0.5	0.7	0.7
055	Diphtheria.....	1,562	1,416	3,279	3,053	9.2	8.1	18.4	16.7
045, 046, 048	Dysentery ³	8	2	4	12	5	5	5	0.1
046	Amoebic.....	1,558	1,233	2,640	1,479	9.0	7.1	14.8	8.1
045	Bacillary.....	8	15	9	1	5	0.1	0.1	5
082.0	Encephalitis, infectious.....	3	15	9	1	3	0.1	0.1	5
049.0, 042.1, 049.2	Food poisoning.....	3	847	1,216	1,288	3	4.9	10.4	10.7
062, N998.5	Hepatitis, infectious (including serum hepatitis).....	4,515	4,723	6,314	12,381	26.5	27.1	35.4	67.9
080.2, 082.1	Meningitis, viral or aseptic.....	283	896	694	411	1.7	5.1	6.0	3.5
057	Meningococcal infections.....	283	201	158	120	1.7	1.2	0.9	0.7
766	Perinphigus neonatorum (impetigo of the newborn).....	3	5	7	13	3	5	0.1	0.1
056	Pertussis (whooping cough).....	6,932	7,259	5,992	5,478	40.7	41.6	33.6	30.0
080.0, 080.1	Poliomyelitis, paralytic.....	249	1,886	909	189	1.5	10.8	5.1	1.0
050, 051	Scarlet fever and streptococcal sore throat.....	11,118	23,413	21,251	12,765	65.3	134.2	119.3	70.0
040, 041	Typhoid and paratyphoid fever.....	304	544	335	266	1.8	3.1	1.9	1.5
020 039	Venereal diseases ⁴	17,086	16,978	17,834	18,777	100.2	97.3	100.1	103.0
030-035	Gonorrhoea.....	15,040	14,826	16,661	16,463	88.2	85.0	87.9	90.3
020-029	Syphilis.....	2,038	2,144	2,168	2,311	12.0	12.3	12.2	12.7

¹ Excludes the Northwest Territories.

² Includes venereal diseases only for Northwest Territories.

³ Not reportable.
100,000 population.

⁴ Includes other cases and cases where type not specified.

⁵ Less than 0.05 per

18.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1961

International List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.
NUMBER OF CASES													
044	Brucellosis (undulant fever)	—	—	—	—	61	9	29	6	2	2	—	..
764	Diarrhoea of the newborn, epidemic	—	1	33	—	—	1	12	1	—	35	—	..
055	Diphtheria	1	—	—	—	45	2	16	9	19	1	—	..
045, 046, 048	Dysentery ²	4	16	1,042	4	152	443	347	56	177	808	4	..
046	Amoebic	—	—	1	—	—	—	—	3	—	2	—	..
045	Bacillary	—	16	48	4	162	437	343	53	115	307	4	..
082.0	Encephalitis, infectious	—	1	—	—	—	—	—	—	1	—	—	..
049.0, 042.1, 049.2	Food poisoning	13	—	149	5	432	1	41	36	87	524	1	..
092, N998.5	Hepatitis, infectious (including serum hepatitis)	618	141	1,821	181	1,544	3,009	1,470	849	1,006	1,677	65	..
080.2, 082.1	Meningitis, viral or aseptic	24	1	27	16	145	1	8	8	82	100	1	..
057	Meningococcal infections	7	1	6	2	16	50	6	16	1	15	—	..
766	Pemphigus neonatorum (impetigo of the newborn)	—	1	—	—	—	1	1	—	—	12	—	..
056	Pertussis (whooping cough)	362	264	311	12	2,117	1,829	9	47	315	212	—	..
080.0, 080.1	Polio myelitis, paralytic	9	—	1	1	115	23	—	7	26	7	—	..
050, 051	Scarlet fever and streptococcal sore throat	196	1,349	1,597	55	866	3,073	144	1,737	1,673	2,068	2	..
040, 041	Typhoid and paratyphoid fever	8	—	11	4	159	25	2	10	19	28	—	..
020-039	Veneral diseases ³	283	33	379	310	3,447	3,276	2,249	1,724	2,853	3,880	200	143
030-035	Gonorrhoea	276	30	349	286	2,745	2,361	2,173	1,523	2,712	3,686	194	138
020-029	Syphilis	7	8	30	24	702	914	71	195	140	214	6	5
RATES PER 100,000 POPULATION													
044	Brucellosis (undulant fever)	—	—	—	—	1.2	0.1	3.1	0.6	0.2	0.1	—	..
764	Diarrhoea of the newborn, epidemic	—	1.0	4.5	—	—	1	1.3	1	—	2.1	—	..
055	Diphtheria	0.2	—	—	—	0.9	1.7	1.0	1.4	0.1	—	—	..
045, 046, 048	Dysentery ²	0.9	15.2	141.4	0.7	2.9	7.1	37.6	6.1	13.3	49.6	26.7	..
046	Amoebic	—	—	0.1	—	—	0.1	—	0.3	—	0.1	—	..
045	Bacillary	—	15.2	6.6	0.7	2.9	7.0	37.2	5.7	8.6	18.8	26.7	..
082.0	Encephalitis, infectious	—	1	—	—	—	1	—	—	0.1	—	—	..
049.0, 042.1, 049.2	Food poisoning	2.8	—	20.2	0.8	8.2	1	4.4	3.9	6.5	32.2	6.7	..
092, N998.5	Hepatitis, infectious (including serum hepatitis)	134.9	134.3	247.1	30.3	29.4	48.3	159.4	91.8	75.5	102.9	433.3	..
080.2, 082.1	Meningitis, viral or aseptic	5.2	1	3.7	2.7	2.8	1	0.9	0.9	6.2	6.1	6.7	..
057	Meningococcal infections	1.5	1.0	0.8	0.3	0.3	0.8	0.7	1.7	0.1	0.9	—	..
766	Pemphigus neonatorum (impetigo of the newborn)	—	1	—	—	—	—	0.1	—	—	0.7	—	..
056	Pertussis (whooping cough)	79.0	251.4	42.2	2.0	40.3	29.3	1.0	5.1	23.6	13.0	—	..
080.0, 080.1	Polio myelitis, paralytic	2.0	—	0.1	0.2	2.2	0.4	—	0.8	2.0	0.4	—	..
050, 051	Scarlet fever and streptococcal sore throat	42.8	1,284.8	216.7	9.2	16.5	49.4	15.6	137.8	125.6	126.9	13.3	..
040, 041	Typhoid and paratyphoid fever	1.7	—	1.5	0.7	3.0	0.4	0.2	1.1	1.4	1.7	—	..
020-039	Veneral diseases ³	61.8	31.4	51.4	51.8	65.5	52.5	243.9	186.4	214.2	238.2	1,333.3	621.7
030-035	Gonorrhoea	60.3	28.6	47.4	47.8	52.2	37.9	236.2	165.2	203.6	225.0	1,293.3	600.0
020-029	Syphilis	1.5	2.9	4.1	4.0	13.5	14.7	7.7	21.1	10.5	13.1	40.0	21.7

¹ Not reportable.

100,000 population.

² Includes other cases and cases where type not specified.

³ Less than 0.05 per

Illness in the Federal Civil Service.—A study of the incidence and duration of illness among federal civil servants is made annually from data supplied by medical certificates, which are required for all absences of more than three days at one time and for absence of any duration after seven days of casual leave have been taken. During the calendar year 1961, of an estimated 145,300 civil servants covered by Civil Service Leave Regulations,

48,263 reported ill by medical certificate. The number of new illnesses, as certified by medical certificate, was 74,542, somewhat higher than the 70,243 reported for 1960. Similarly, the number of days of completed illnesses increased to 1,034,593 in 1961 from the 990,804 reported for 1960. Other relevant statistics for 1961 indicate that, on the average, 7.5 working days were lost through illness by each employee, including 4.9 days of certified and 2.6 days of casual sick leave.

Several rates related to sickness absenteeism were calculated from the 1961 survey, based on the number of certified illnesses that occurred at some time during the year but not necessarily completed during the same year. These illnesses totalled 76,505. The severity rate or average number of calendar days per illness was 13.5 and the average number of working days was 9.3. The frequency rate or the average number of illnesses per 100 employees was 52.7. In addition, for each working day during the year, about two of every 100 civil servants were absent on certified sick leave.

19.—Rates per 1,000 Employees of Illnesses and Days of Illness for Federal Civil Servants, by Cause, 1961

(Certified sick leave only)

International List Number	Cause	Rates per 1,000 Employees	
		Illnesses	Days of Illness
		No.	No.
001-138	Infective and parasitic diseases.....	13.5	263.0
140-239	Neoplasms	8.6	295.7
240-289	Allergic, endocrine system, metabolic, and nutritional diseases.....	9.3	149.9
290-299	Diseases of the blood and blood-forming organs.....	1.7	35.5
300-326	Mental, psychoneurotic, and personality disorders.....	16.8	489.4
330-398	Diseases of the nervous system and sense organs.....	20.6	324.8
400-468	Diseases of the circulatory system.....	28.6	932.4
470-527	Diseases of the respiratory system	213.8	1,580.2
530-587	Diseases of the digestive system.....	74.9	1,026.1
590-637	Diseases of the genito-urinary system.....	24.9	392.7
640-689	Deliveries and complications of pregnancy, childbirth, and the puerperium.....	1.7	23.7
690-716	Diseases of the skin and cellular tissue.....	14.6	163.1
720-749	Diseases of the bones and organs of movement.....	32.5	524.6
750-759	Congenital malformations.....	0.5	18.6
780-795	Symptoms, senility, and ill-defined conditions.....	24.4	281.6
N800-N999	Accidents, poisonings, and violence.....	37.4	584.7
Totals, All Illnesses.....		526.5	7,096.1

PART II.—PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income-maintenance measures such as old age security and family allowances, and programs such as unemployment insurance and the National Employment Service where nation-wide co-ordination is required, are administered federally. Substantial federal aid is given to the provinces in meeting the costs of public assistance. The Federal Government also provides services for special groups such as veterans, Indians, Eskimos and immigrants.

The Department of National Health and Welfare is generally responsible for federal welfare matters; the Departments of Veterans Affairs, Citizenship and Immigration, and Northern Affairs and National Resources also operate programs for specific groups. The Unemployment Insurance Commission is responsible for the operation of unemployment insurance and the National Employment Service.

Administration of welfare services is primarily the responsibility of the provinces but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Section 1.—Federal Government Programs

Subsection 1.—Family Allowances

The Family Allowances Act of 1944 is designed to assist in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under the age of 16 years who was born in Canada, or who has been a resident of the country for one year, or whose father or mother was domiciled in Canada for three years immediately prior to the birth of the child. Payment is made by cheque each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are paid at the monthly rate of \$6 for each child under 10 years of age and \$8 for each child aged 10 or over but under 16 years. If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school regulations or on behalf of a girl who is married and under 16 years of age. The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. A Regional Director for the Yukon and Northwest Territories is located at Ottawa.

The Federal Government pays family assistance, at the rates applicable for family allowances, for each child under 16 years of age resident in Canada and supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returned to Canada to reside permanently. The assistance, which is payable monthly and for a maximum period of one year, is not payable for a child eligible for family allowances.

1.—Family Allowances Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books, beginning with the 1947 edition.

Province or Territory	Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance ¹		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	\$	\$	\$
Newfoundland	65,705	204,855	3.12	20.87	6.69	16,336,849
Prince Edward Island	14,190	39,931	2.81	18.98	6.74	3,204,881
Nova Scotia	105,868	271,036	2.56	17.14	6.70	21,623,665
New Brunswick	83,014	239,340	2.88	19.41	6.73	19,222,615
Quebec	739,126	1,976,677	2.67	17.96	6.71	157,712,911
Ontario	929,461	2,133,116	2.29	15.32	6.68	168,442,100
Manitoba	132,338	315,238	2.38	15.94	6.69	25,065,334
Saskatchewan	131,975	329,681	2.50	16.70	6.69	26,313,109
Alberta	204,698	496,712	2.43	16.13	6.65	38,928,125
British Columbia	236,646	538,934	2.28	15.24	6.69	42,687,279
Yukon and Northwest Territories	6,296	16,767	2.66	17.04	6.40	1,244,335
Canada						
1962	2,649,317	6,562,287	2.48	16.58	6.69	520,781,193
1961	2,602,930	6,397,134	2.46	16.42	6.68	506,191,647
1960	2,551,264	6,219,989	2.44	16.27	6.67	491,214,359
1959	2,492,581	6,035,256	2.42	16.15	6.67	474,787,068
1958	2,406,734	5,796,380	2.41	16.08	6.68	437,886,560

¹ Based on gross payment for March.

Subsection 2.—Old Age Security

The Old Age Security Act of 1951, as amended, provides a universal pension of \$65 a month payable by the Federal Government to all persons aged 70 or over, subject to a residence qualification. To qualify for pension a person must have resided in Canada for ten years immediately preceding its commencement or, if absent during that period, must have been actually present in Canada prior to it for double any period of absence and must have resided in Canada at least one year immediately preceding commencement of pension. Payment of pension may be continued for any period of residence outside Canada if the pensioner has resided in Canada for at least 25 years after attaining the age of 21 or, if he has not, it may be continued for six consecutive months exclusive of the month of departure from Canada. The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital.

The pension is financed on the pay-as-you-go method through a 3-p.c. sales tax, a 3-p.c. tax on corporation income and, subject to a limit of \$90 a year, a 3-p.c. tax on taxable personal income. Yields from these taxes are paid into the Old Age Security Fund; if they are insufficient to meet the pension payments, temporary loans or grants are made from the Consolidated Revenue Fund.

2.—Operations of the Old Age Security Fund, Years Ended Mar. 31, 1958-62

Item	1958	1959	1960	1961	1962
	\$	\$	\$	\$	\$
Revenue—					
Sales tax.....	175,792,442	173,622,697	270,000,055	270,231,478	284,879,239
Corporation income tax.....	60,664,000	55,328,000	91,336,000	103,500,000	100,125,000
Individual income tax.....	135,001,000	146,350,000	185,550,000	229,400,600	258,950,000
Grant from Consolidated Revenue Fund.....	102,401,662	183,979,162	—	—	—
Loan from Consolidated Revenue Fund.....	—	—	28,000,991	—	—
Totals, Revenue.....	473,859,104	559,279,858	574,887,046	603,131,478	643,954,239
Expenditure—					
Benefit payments.....	473,859,104	559,279,858	574,887,046	592,413,283	625,107,804
Excess of Revenue over Benefit Payments.....	—	—	—	10,718,195 ¹	18,846,435 ²

¹ Applied to repayment of loan from Consolidated Revenue Fund, leaving a net loan of \$17,282,796. ² Of this sum, \$17,282,796 was applied to repayment of loan from Consolidated Revenue Fund, leaving a balance in the Old Age Security Fund, Mar. 31, 1962, of \$1,563,639.

Persons in receipt of old age assistance (see p. 295) who reach age 70 are automatically transferred to old age security. Others make application to the regional offices. Recipients of old age security who are in need may receive supplementary aid under general assistance programs in the provinces. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

3.—Old Age Security Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1952-53 edition.

Province	Pensioners in March	Net Pensions Paid during Fiscal Year	Province or Territory	Pensioners in March	Net Pensions Paid during Fiscal Year
	No.	\$		No.	\$
Newfoundland.....	17,801	11,947,626	British Columbia.....	117,815	79,622,315
Prince Edward Island.....	7,603	5,151,999	Yukon and Northwest Territories.....	656	439,865
Nova Scotia.....	42,572	28,895,584			
New Brunswick.....	31,316	21,291,111	Canada.....1962	927,590	625,107,804
Quebec.....	196,827	131,711,372	1961	904,906	592,413,283
Ontario.....	335,339	226,065,413	1960	876,410	574,887,046
Manitoba.....	56,567	38,085,361	1959	854,234	559,279,858
Saskatchewan.....	58,436	39,621,029	1958	827,560	473,859,103
Alberta.....	62,658	42,276,129			

Subsection 3.—Other Federal Government Programs

Unemployment Insurance and National Employment Service.—In 1940, by an amendment to the British North America Act, the Federal Government was given jurisdiction in the field of unemployment insurance and the Unemployment Insurance Act was passed establishing a national system of unemployment insurance which is outlined in Chapter XVI.

The National Employment Service is operated in conjunction with the unemployment insurance scheme. Statistics of positions offered and placements made are given in Chapter XVI.

Prairie Farm Assistance.—The Prairie Farm Assistance Act is administered by the Department of Agriculture; a description of the legislation is given in Chapter IX.

Welfare Services for Indians and Eskimos.—Indians and Eskimos benefit as other Canadians under the federal income maintenance programs, but welfare services are administered by the Department of Citizenship and Immigration and the Department of Northern Affairs and National Resources, respectively, with some provincial participation. This topic is covered in the Population Chapter (pp. 189-191).

Section 2.—Federal-Provincial Programs

Subsection 1.—Old Age Assistance

The Old Age Assistance Act of 1951, as amended, provides for federal reimbursement to the provinces for assistance to persons aged 65 or over who are in need and who have resided in Canada for at least ten years or who, if absent from Canada during this period, have been present in Canada prior to the commencement of the ten-year period for double any period of absence. On reaching age 70 a pensioner is transferred to old age security. The federal contribution may not exceed 50 p.c. of \$65 a month or of the assistance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of assistance payable, the maximum income allowed and other conditions of eligibility. All provinces use a maximum payment of \$65 a month and the income limits set out below.

For an unmarried person, total income allowed, including assistance, may not exceed \$1,140 a year. For a married couple it may not exceed \$1,980 a year or, when the spouse is

blind within the meaning of the Blind Persons Act, \$2,340 a year. Assistance is not paid to a person receiving an old age security pension or an allowance under the Blind Persons Act, the Disabled Persons Act, or the War Veterans Allowance Act.

Recipients of old age assistance who are in need may receive supplementary aid under general assistance programs in the provinces. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

4.—Old Age Assistance Statistics, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books, beginning with the 1952-53 edition.

Province or Territory	Recipients in Month of March	Average Amount of Monthly Assistance	P.C. of Recipients to Population Age 65-69	Federal Government Contribution during Year
	No.	\$		\$
Newfoundland.....	5,184	52.42 ¹	52.90	1,672,510
Prince Edward Island.....	897	49.07 ²	24.92	248,608
Nova Scotia.....	5,248	51.76 ²	24.64	1,569,348
New Brunswick.....	5,421	62.42 ²	33.46	1,760,484
Quebec.....	34,615	50.84 ²	28.94	10,896,302
Ontario.....	22,868	58.24 ²	12.54	6,903,031
Manitoba.....	5,082	62.11 ²	18.09	1,652,229
Saskatchewan.....	5,760	50.47 ²	20.79	1,761,661
Alberta.....	6,494	50.08 ²	20.23	2,000,956
British Columbia.....	7,189	51.64 ¹	14.32	2,283,927
Yukon Territory.....	46	54.39 ²	23.00	15,507
Northwest Territories.....	140	53.83 ²	46.67	46,021
Canada.....	1962	53.87⁴	20.14	30,810,585
	1961	50.56	20.57	30,657,396
	1960	50.74	20.57	30,349,393
	1959	50.97	20.64	30,207,284
	1958	52.19	19.78	24,961,383

¹ The increase in the maximum assistance rate from \$55 to \$65 a month was effective in these provinces from Apr. 1, 1962.

² The effective date for the increase from \$55 to \$65 a month in the maximum assistance rate was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, 1962.

³ The effective date of the increase from \$55 to \$65 a month in the maximum assistance rate was July 1, 1962.

⁴ The average monthly assistance was \$61.09 for June 1962, the first month for which an average based on the maximum of \$65 a month was computed.

Subsection 2.—Allowances for Blind Persons

The Blind Persons Act of 1951, as amended, provides for federal reimbursement to the provinces for allowances to blind persons aged 18 or over who are in need and who have resided in Canada for at least ten years. The federal contribution may not exceed 75 p.c. of \$65 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable and the maximum income allowed. All provinces use a maximum payment of \$65 a month and the income limits set out below.

To qualify for an allowance a person must meet the required definition of blindness and have resided in Canada for ten years immediately preceding commencement of allowance or, if absent from Canada during this period, must have been present in Canada prior to its commencement for a period equal to double any period of absence. For an unmarried person, total income including the allowance may not exceed \$1,380 a year; for a person with no spouse but with one or more dependent children, \$1,860; for a married couple, \$2,340. When the spouse is also blind, income of the couple may not exceed \$2,460. Allowances are not payable to a person receiving assistance under the Old Age Assistance

Act, an allowance under the Disabled Persons Act or the War Veterans Allowance Act, a pension under the Old Age Security Act or a pension for blindness under the Pensions Act.

Recipients of blindness allowances who are in need may receive supplementary aid under general assistance programs in the provinces. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

5.—Statistics of Allowances for the Blind, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1952-53 edition.

Province or Territory	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
	No.	\$		\$
Newfoundland.....	429	54.40 ¹	0.204	208,816
Prince Edward Island.....	80	63.13 ²	0.157	40,168
Nova Scotia.....	771	63.74 ²	0.205	386,325
New Brunswick.....	697	64.24 ²	0.241	349,237
Quebec.....	2,901	53.59 ²	0.104	1,412,002
Ontario.....	1,846	57.94 ²	0.053	836,687
Manitoba.....	378	62.93 ²	0.076	188,335
Saskatchewan.....	406	53.03 ²	0.085	193,308
Alberta.....	454	53.17 ²	0.063	222,545
British Columbia.....	563	53.47 ¹	0.062	270,365
Yukon Territory.....	3	55.00 ²	0.036	1,485
Northwest Territories.....	45	52.11 ²	0.372	20,580
Canada.....				
.....1962	8,573	56.78 ⁴	0.087	4,129,852
.....1961	8,642	52.97	0.089	4,161,833
.....1960	8,671	53.05	0.090	4,197,087
.....1959	8,747	53.15	0.092	4,235,131
.....1958	8,400	54.02	0.090	3,575,724

¹ The increase in the maximum rate of allowance from \$55 to \$65 a month was effective in these provinces from Apr. 1, 1962.

² The effective date for the increase from \$55 to \$65 a month in the maximum rate of allowance was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, 1962.

³ The effective date of the increase from \$55 to \$65 a month in the maximum rate of allowance was July 1, 1962.

⁴ The average monthly allowance was \$62.65 for June 1962, the first month for which an average based on the maximum of \$65 a month was computed.

Subsection 3.—Allowances for Disabled Persons

The Disabled Persons Act of 1954, as amended, provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons aged 18 or over who are in need and who have resided in Canada for at least ten years immediately preceding commencement of allowance or, if absent from Canada during this period, have been present in Canada prior to its commencement for a period equal to double any period of absence. To qualify for an allowance a person must meet the definition of permanent and total disability set out in the Regulations to the Act which requires that a person must be suffering from a major physiological, anatomical or psychological impairment, verified by objective medical findings; the impairment must be one that is likely to continue indefinitely without substantial improvement and that will severely limit activities of normal living. The federal contribution may not exceed 50 p.c. of \$65 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable, the maximum income allowed and other conditions of eligibility. All provinces use a maximum payment of \$65 a month and the income limits set out in the following paragraph.

For an unmarried person, total income including the allowance may not exceed \$1,140 a year. For a married couple the limit is \$1,980 a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed \$2,340 a year. Allowances are not paid to a person receiving an allowance under the Blind Persons Act or the War Veterans Allowance Act, assistance under the Old Age Assistance Act, a pension under the Old Age Security Act, or a mother's allowance.

The allowance is not payable to a patient in a mental institution or tuberculosis sanatorium. A recipient who is resident in a nursing home, an infirmary, a home for the aged, an institution for the care of incurables, or a private, charitable or public institution is eligible for the allowance only if the major part of the cost of his accommodation is being paid by himself or another individual. When a recipient is required to enter a public or private hospital, the allowance may be paid for no more than two months of hospitalization in a calendar year, excluding months of admission and release, but for the period that a recipient is in hospital for therapeutic treatment for his disability or rehabilitation, the allowance may continue to be paid.

As in previous years, disabilities in the two medical classes—mental, psychoneurotic and personality disorders, and diseases of the nervous system and sense organs—were found to be the most prevalent among the persons becoming eligible for allowance in the year ended Mar. 31, 1962; diseases of the circulatory system was the third largest class. Mental deficiency, the most frequently occurring disability, accounted for over one quarter of all cases granted an allowance.

Recipients of disability allowances who are in need may receive supplementary aid under general assistance programs in the province. Where the amount of aid is determined through an individual assessment of need, which takes the recipient's requirements and resources into consideration, the Federal Government may share in it under the Unemployment Assistance Act.

6.—Statistics of Allowances for Disabled Persons, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1956 edition.

Province or Territory	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year	
	No.	\$		\$	
Newfoundland.....	1,292	54.51 ¹	0.616	413,676	
Prince Edward Island.....	780	64.44 ²	1.529	258,995	
Nova Scotia.....	2,776	64.02 ²	0.737	908,644	
New Brunswick.....	2,000	64.54 ²	0.692	668,392	
Quebec.....	22,528	54.09 ²	0.806	7,460,933	
Ontario.....	13,762	63.47 ²	0.394	4,503,239	
Manitoba.....	1,447	64.04 ²	0.290	477,943	
Saskatchewan.....	1,502	54.33 ²	0.315	489,505	
Alberta.....	1,762	53.22 ²	0.246	558,533	
British Columbia.....	2,156	54.02 ¹	0.239	685,428	
Yukon Territory.....	5	55.00 ²	0.060	1,760	
Northwest Territories.....	19	55.00 ²	0.157	6,563	
Canada.....	1962	50,029	58.07 ⁴	0.509	16,433,611
	1961	50,630	53.80	0.522	16,385,820
	1960	49,889	53.86	0.520	16,050,514
	1959	48,040	53.84	0.508	15,330,368
	1958 ³	41,840	53.88	0.450	11,091,661

¹ The increase in the maximum rate of allowance from \$55 to \$65 a month was effective in these provinces from Apr. 1, 1962.

² The effective date for the increase from \$55 to \$65 a month in the maximum rate of allowance was Feb. 1, 1962 in these jurisdictions but not all of them had made the adjustments by Mar. 31, 1962.

³ The effective date of the increase from \$55 to \$65 a month in the maximum rate of allowance was July 1, 1962.

⁴ The average monthly allowance was \$64.04 for June 1962, the first month for which an average based on the maximum of \$65 a month was computed.

⁵ Excluding Yukon Territory.

Subsection 4.—Unemployment Assistance

Unemployment assistance is a federal grant-in-aid program under which the Federal Government shares with the provinces and their municipalities the costs of general assistance. The general assistance programs in the various provinces are known by different names, such as social allowances, social aid, social assistance and general welfare assistance.

Under the Unemployment Assistance Act 1956, as amended, the Federal Government may enter an agreement with any province to reimburse it for 50 p.c. of the unemployment assistance expenditures made by the province and its municipalities. All provinces and the two territories have signed agreements under the Act. The rates and conditions of assistance are determined by the province or municipality. Payments to both employable and unemployable persons who are unemployed and in need are shareable under the agreement as are the costs of maintaining persons in homes for special care (nursing homes or homes for the aged). The Federal Government shares in additional assistance paid to needy persons in receipt of old age security pensions, old age assistance, blind persons' allowances, disabled persons' allowances and unemployment insurance benefits, where the amount of the assistance paid is determined through an assessment both of the recipient's basic requirements and of his financial resources.

During the year ended Mar. 31, 1962, the Federal Government made payments for unemployment assistance amounting to \$92,044,244. The federal share of assistance costs shown in Table 7, however, is based on payments for the months in which the assistance was actually given and, since claims may be submitted at any time within six months after the month to which they relate, the figures for each fiscal year include certain reimbursements made to the provinces after the end of that year.

7.—Unemployment Assistance, by Province, Year Ended Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the Act to 1961 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province	Recipients ¹ in March	Federal Share of Unem- ployment Assistance Costs ²	Province or Territory	Recipients ¹ in March	Federal Share of Unem- ployment Assistance Costs ²
	No.	\$		No.	\$
Newfoundland.....	59,144 ³	4,064,063	British Columbia.....	91,816 ³	15,965,364
Prince Edward Island..	2,819	174,422	Yukon Territory.....	205	39,820
Nova Scotia.....	26,200 ³	1,673,624	Northwest Territories.....	233	33,766
New Brunswick.....	33,841 ³	1,526,972			
Quebec.....	253,584	32,339,377	Canada.....1962	703,739	87,831,749
Ontario.....	123,923	18,741,458	1961	562,720	59,707,964
Manitoba.....	32,348 ³	4,285,212	1960	322,553	38,201,087
Saskatchewan.....	44,490 ³	4,525,334	1959	297,760	30,849,721
Alberta.....	35,136 ³	4,462,337	1958⁴	182,054	10,813,003

¹ Includes dependants.

² Payment figures shown are for the months to which the claims made under the program relate and include amounts paid to the provinces by the Federal Government after the end of the fiscal year.

³ Includes persons of a class formerly granted aid under a mothers' allowances program.

⁴ Nine provinces only participating; all provinces and territories were participating in the program in 1959.

Subsection 5.—Fitness and Amateur Sport Program

The Fitness and Amateur Sport Act, passed Sept. 25 and proclaimed Dec. 15, 1961, brought a new focus and impetus to the development of fitness in Canada and to efforts to raise levels of participation and proficiency in both competitive and non-competitive sports. The Act is administered by the Fitness and Amateur Sport Directorate in the Welfare Branch of the Department of National Health and Welfare.

The new legislation provides for an annual \$5,000,000 allocation "to encourage, promote and develop fitness and amateur sport". The program operates through three main channels. Grants are made to national organizations to assist national and international

aspects of the program, and to the provinces to develop and extend community effort. In addition, federal co-ordinating and developmental work is carried on by the department which works in close co-operation with other federal agencies concerned with different aspects of fitness and amateur sport.

A 30-member National Advisory Council on Fitness and Amateur Sport was appointed in 1962 and, in addition, a federal-provincial committee, at the deputy minister level, is concerned with the federal-provincial aspects of the program. Through these two groups the Minister of National Health and Welfare is advised, both from the point of view of the private citizens of Canada and from that of the governments directly concerned with the program. Specialist committees of experts advise on technical aspects of the program as required.

One of the main tasks to be undertaken under the new program is the building up of training courses for leaders, coaches and other professional personnel at the community level. The new Act bolsters and enlarges the emphasis already being given to this work by programs in operation in a number of provinces. Awards of scholarships, fellowships and bursaries will assist persons in undertaking professional studies in physical education, recreation and the medical aspects of fitness, which should do much to overcome acute shortages of trained personnel.

The Act provides for aid to research on aspects of physical performance, such as the effects of activity on different age groups and the effects of different kinds of activity on physical development. Surveys of resources, of facilities and of personnel may also be assisted. The urgent need for new and greatly expanded informational material for both the expert and the public has long been recognized; through the new program, instructional material suitable to Canadian needs can be developed with the co-operative efforts of experts from across Canada.

Provision is made for recognition of achievement in fitness and amateur sport activities through awards or citations. Also, the promotion and development of participation in national and international sport competitions will be assisted. Because of the ease with which it could be implemented, this aspect of the Act could receive early attention. In view of the high costs involved and the practically unlimited demand for new sports and recreational facilities, this type of assistance is restricted to the construction of national or provincial training centres serving large areas. The major vehicle for federal aid to construction of local sports and recreational facilities is the municipal winter works program administered by the Department of Labour.

The groundwork of the program was laid during the first year of operation when \$230,000 was expended on grants to organizations. During the second year, expenditure amounted to \$1,000,000 on projects which included research, scholarships, bursaries and fellowships, educational and information services, grants to the provinces for the development of services at the community level and grants to national agencies to assist international and national competition and for organizational and instructional purposes.

Subsection 6.—National Welfare Grant Program

In November 1962, the Federal Government established a national welfare grant program consisting of general welfare and professional training grants and welfare research grants; an amount of \$250,000 was allocated for the first fiscal year (1962-63) of its operation. The program provides funds for demonstration and other projects designed to improve welfare administration, to develop provincial consultative and co-ordinating services, and to strengthen and extend public and voluntary welfare services in child welfare, aging, general assistance and other welfare fields. Costs are shared by the federal and provincial governments.

Also on a cost-sharing basis, funds are available for bursaries for graduate study at Canadian Schools of Social Work to students who have just completed their undergraduate studies, to persons who have left employment in welfare and related fields to start or

complete their training, and to persons employed in public and voluntary welfare agencies in Canada who have been granted educational leave as part of agency staff-development plans. Funds are also available for a variety of short-term staff-training programs for graduate social workers and non-graduate welfare personnel employed by public or voluntary welfare agencies on direct service, supervisory or administrative work, where this can be justified as a means of achieving more effective and efficient administration.

Teaching and field instruction grants are available to Canadian Schools of Social Work to assist in the employment of additional faculty members and field instructors required as a result of the welfare grant program.

Funds are available to public and voluntary agencies for a variety of surveys, studies and research projects. Priority is given to those projects holding promise of making significant steps forward in the organization, co-ordination and staffing of existing welfare services and in the development of new services focused on the prevention of welfare problems and dependency.

Each year scholarships for graduate study in social work will be awarded from federal funds to those persons who have completed their undergraduate studies with high academic standing. Fellowships for study at Canadian and foreign universities will also be awarded to persons who have demonstrated leadership qualities and ability of high order in the fields of administration, teaching and research in welfare.

Subsection 7.—Vocational Rehabilitation

The nation-wide vocational rehabilitation program, started in 1952, has been consolidated and extended since the enactment of the Vocational Rehabilitation of Disabled Persons Act, 1961. Under federal-provincial agreements to share equally the costs of co-ordination, assessment and provision of services to disabled individuals, of training personnel, and of research, the provinces have developed comprehensive programs in co-operation with existing services. Services, which may be either provided directly or obtained from other agencies or individuals by provincial rehabilitation authorities, include medical, social and vocational assessment, counselling, restorative services, vocational training and employment placement. They are designed to assist individuals having a substantial physical or mental disability to become vocationally useful in gainful employment or in the home. A provincial Co-ordinator or Director of Rehabilitation, placed in the health or welfare department, is responsible for the co-ordination and administration of vocational rehabilitation services to disabled individuals.

The National Co-ordinator in the Civilian Rehabilitation Branch, Department of Labour, administers the federal aspects of this program including the co-ordination of federal activities in vocational rehabilitation and the provision of consultative services. A National Advisory Council composed of representatives of the provinces, employers, labour, the medical profession, national voluntary agencies and the universities has been established under the Act. A federal Interdepartmental Committee on Vocational Rehabilitation and the Co-ordination of Rehabilitation Services has also been formed. In the fiscal year 1961-62, prior to the new legislation becoming effective, federal-provincial expenditures under the old program (exclusive of vocational training) totalled \$364,850. Full reports were received of 1,669 disabled persons rehabilitated during the year; before rehabilitation the majority of these persons and their dependants relied on relatives or public assistance for support at an estimated annual cost of \$900,000, whereas following rehabilitation the estimated total annual earnings of those gainfully employed was estimated to be \$3,200,000.

Although administered separately, medical rehabilitation, vocational training and special employment services for the handicapped are available as integral parts of the federal-provincial rehabilitation program. The provincial co-ordinators seek out disabled persons for assessment and referral to appropriate services. Suitable training where required is supplied through the federal-provincial agreements made under the Technical and Vocational Training Assistance Act administered by the Department of Labour.

"Program 6", Training of the Disabled of the Canadian Vocational Training Program, provides for equal sharing by Canada and the provinces of the cost of approved programs for the training of disabled persons who require such training to fit them for gainful employment. The training costs cover vocational assessment, pre-vocational preparation, tuition, books and supplies, maintenance allowances, travel expenses and extra costs necessitated by disability. Disabled persons approved by provincial training selection committees may attend regular provincial or municipal vocational schools, private trade schools, universities, special classes, or be trained on the job. During 1961-62 there were 2,765 disabled persons enrolled in various courses at a total cost of \$736,372; 1,457 of these persons completed their training within the year.

The National Employment Service continues its responsibility for job placement of disabled persons with occupational handicaps. Employment liaison officers of the Special Services Section, who advise on employment conditions and the working capabilities of disabled persons, have been seconded to the offices of the provincial co-ordinators of rehabilitation in five provinces. Referrals for job placement are made to some 350 Special Services Officers in the local employment offices. Special placements of handicapped persons who required assistance in finding work in 1962 (including those referred from provincial rehabilitation authorities) numbered 20,403.

The Federal Government also provides direct services for particular groups through programs administered by the Department of Veterans Affairs for disabled, chronically ill, and aging veterans, by the Department of Citizenship and Immigration for physically and socially handicapped Indians, and by the Department of Northern Affairs and National Resources for the training and resettlement of disabled Eskimos and Indians within its jurisdiction.

Section 3.—Provincial Welfare Programs

Major welfare programs governed by provincial legislation include general assistance and social allowances, mothers' allowances, services for the aged, and child care and protection. In most provinces responsibility for a number of the programs is shared by the provinces and their municipalities. Provincial administration of welfare services is carried out through the department of public welfare in each province; several departments have established regional offices to facilitate administration and to provide consultative services to the municipalities.

In recent years, the provinces have assumed a substantial share of the costs of general assistance or residual aid, and some have broadened the area of social allowances, formerly limited almost entirely to mothers' allowances, in which the municipalities do not share costs. The financial contributions of the Federal Government to the provinces for unemployment assistance (see p. 299) has doubtless been an important contributing factor in these developments.

All provinces continue to give consideration to the need for planning on behalf of older citizens. A number have increased their capital or maintenance grants to municipalities and to voluntary groups for homes for the aged and are also assisting in the construction of low-rental housing projects.

The main efforts in child welfare have been directed toward improvement of standards and greater flexibility of services, with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions, and the finding of adoption homes for all children in need of them.

The public services are supplemented by an impressive number of voluntary agencies which also contribute to community welfare, including the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups and released prisoners. Welfare councils and social planning councils contribute to the planning and co-ordinating of local welfare services. Local voluntary agencies and institutions may

receive public grants, depending on the nature and standard of the services they render, although, with the exception of the semi-public children's aid societies, their main support may be from united funds or community chests, or from sponsoring organizations.

Subsection 1.—Mothers' Allowances

All provinces make provision for allowances to needy mothers who are deprived of the breadwinner and are unable to maintain their dependent children without assistance. A number of provinces include mothers' allowances in a broadened program of provincial allowances to several categories of persons with long-term need. There is a tendency to incorporate this legislation with general assistance within a single Act, while continuing separate administration. In British Columbia, on the other hand, aid is provided to needy mothers under the general assistance program and in the same way as to other needy persons.

Subject to conditions of eligibility which vary from province to province, mothers' allowances or their equivalents are payable from provincial funds to applicants who are widowed, or whose husbands are mentally incapacitated or are physically disabled and unable to support their families. They are also payable to deserted wives who meet specified conditions; in several provinces to mothers whose husbands are in penal institutions, or who are divorced or legally separated; in some, to unmarried mothers; and in Ontario, Quebec and Nova Scotia to Indian mothers. Foster mothers may be eligible under particular circumstances in most provinces.

The age limit for children is 16 years in most provinces, with provision made to extend payment for a specified period if the child is attending school or if he is physically or mentally handicapped. In all provinces applicants must satisfy conditions of need and residence but the amount of outside income and resources allowed and the length of residence required prior to application vary, the most common period being one year. One province has a citizenship requirement.

The numbers of families and children assisted in each province as at Mar. 31, 1962, together with the amounts of benefits paid during the year are given in Table 8 and rates of benefit as at December 1962 in Table 9.

8.—Mothers' Allowances, by Province, as at Mar. 31, 1962 with Totals for 1958-62

NOTE.—Provincial figures for each year from the inception of the allowance to 1961 are given in the corresponding table of previous Year Books.

Province	Families Assisted	Children Assisted	Payments during the Year Ended Mar. 31
	No.	No.	\$
Newfoundland.....	4,498	12,315	4,308,762
Prince Edward Island.....	269	649	131,300
Nova Scotia.....	2,759	7,452	2,258,875
New Brunswick.....	2,119	6,178	1,356,078
Quebec.....	19,842	52,462	19,479,716
Ontario.....	10,359	25,537	13,650,401
Manitoba.....	1,638 ¹	3,635 ¹	2,360,594
Saskatchewan.....	2,382	5,837	2,679,587
Alberta ²	1,611	3,319	1,879,195
British Columbia ³.....	..	..	..
Canada⁴.....	45,477	117,384	48,104,508
1961.....	45,918 ²	119,421 ²	46,245,393
1960.....	43,937 ²	114,469 ²	44,884,971
1959.....	44,240 ²	116,000 ²	41,478,206
1958.....	39,300 ²	104,500 ²	30,881,225

¹ Approximate.

² An additional 1,512 families with 4,466 children were assisted under Part III of the Public Welfare Act; cost of allowances for this group is included in total payments for all groups under Part III.

³ Caseload transferred to social assistance; no separate figures are available.

⁴ Figures for 1958-62 exclude

British Columbia; figures for 1958 also exclude Newfoundland.

9.—Maximum Monthly Rates under Provincial Mothers' Allowances Programs, December 1962

Province	Mother and One Child	Each Additional Child	Disabled Father at Home	Family Maximum	Supplementary
Nfld.....	Food: \$35 or \$37 depending on age of child. Clothing: \$5 for each person. Rent: up to \$20 monthly in rural and to \$30 monthly in urban areas. Fuel: up to \$10.	Food: \$10 for each child under age 16; \$12 for each child age 16 or over. Clothing: \$5.	\$20	None set.	In special circumstances up to \$30 a month additional if necessary for proper support of family.
P.E.I.....	\$45	\$5	No additional allowance granted.	\$125	None granted.
N.S.....	No set maximum; rates are based on average family income for community in which family lives.		Included in budget on which allowance is based.	\$90	None granted.
N.B.....	\$35	\$10	No additional allowance granted.	\$90	Director may grant an additional \$10 for rent if circumstances require it, but only if allowance paid is below maximum.
Que.....	\$75	\$10	\$10	None set (minimum granted \$5).	A supplementary allowance may be granted according to need.
Ont.....	\$120 for mother or father and one child. \$30 for one child living with foster mother.	\$16 for 2nd child \$14 for 3rd child \$12 for 4th child \$10 for 5th child \$8 for 6th child. \$25 for 2nd foster child \$15 for each additional foster child.	Included in budget on which allowance is based.	\$180	An increase in food allowance may be granted on medical recommendation. A fuel allowance of up to \$24 a month may be granted from Sept. 1 to Mar. 31. An increase of 20 p.c. in fuel allowance may be granted under special circumstances.
Man.....	Food, Clothing and Personal Needs: \$52-\$64 depending on age of child. Shelter: rent to \$55, or current taxes and insurance at actual cost, minor repairs to \$125 a year, principal and interest on mortgage or agreement for sale up to \$55 less taxes and insurance. Utilities: up to \$7.	\$14 for child up to 3 years \$16 for child 4-6 years \$21 for child 7-11 years \$26 for child 12-18 years (subject to reductions for 4th and each additional child).	\$25	None set.	\$10 for rent if necessary. Housekeeper service as required. Fuel allowance for eight months. For special needs not covered by basic schedule items, up to \$150 a year.
Sask.....	Food, Clothing, Household and Personal Needs: \$51.80-\$67.00 depending on age of child Rent: \$40 Fuel: up to \$15.15 Utilities: up to \$11.	\$17.40 for pre-school child \$24.35 for child 6-11 years \$29.30 for child 12-15 years \$32.60 for child 16-18 years (subject to reductions for fourth and each additional person).	\$31.50	None set.	Special food allowance may be granted on medical recommendation. An allowance for a housekeeper may be granted if necessary.

9.—Maximum Monthly Rates under Provincial Mothers' Allowances Programs, December 1962—concluded

Province	Mother and One Child	Each Additional Child	Disabled Father at Home	Family Maximum	Supplementary
Alta.....	Food and Clothing: \$48.15-\$68.10 depending on age and sex of child. Rent, Fuel, Utilities: according to community standards.	\$14.95 for food and clothing for infant under 1 year. \$11.40-\$27.20 for food for child 1-18 years depending on age and sex. \$3.55-\$9.05 for clothing for child 1-18 years depending on age and sex, subject to 10 p.c. increase in food allowance for a third person, and reductions of 5 p.c. for a family of seven or more.	\$30.50	None set.	An increase in food allowance may be granted on medical recommendation.
B.C.....	Allowances to needy mothers provided under the Social Assistance Act and not separable.				

Subsection 2.—General Assistance

All provinces make legislative provision for general assistance on a means or needs test basis to needy persons and their dependants who cannot qualify for other forms of aid, and some provinces include those whose benefits under other programs are not adequate. Where necessary the aid may be for maintenance in homes for special care. Besides financial aid for the basic needs of food, clothing, shelter and utilities, a number of provinces also provide incapacitation or rehabilitation allowances, counselling and homemaking services, and post-sanatorium care. This assistance, with some exceptions, is administered by the municipality with substantial financial support from the province, which, in turn, is reimbursed by the Federal Government under the Unemployment Assistance Act for 50 p.c. of the provincial and municipal assistance given (see p. 299).

The provincial departments of public welfare have regulatory and supervisory powers over municipal administration of general assistance and may require certain standards as a condition of provincial aid. Length of residence is not a condition of aid in any province, but the residence of the applicant as defined by statute determines which municipality may be financially responsible for his aid. This rule does not apply in three provinces; British Columbia and Saskatchewan have equalized municipal payments and Quebec does not require its municipalities to contribute to general assistance costs. Provinces with unorganized areas take responsibility for aid in these districts. Under the federal Unemployment Assistance Act, all provinces have agreed that residence shall not be a condition of assistance for applicants who move from one province to another. For persons without provincial residence (usually a period of one year), aid may be given by the province or the municipality and a charge-back may or may not be made to the province or municipality of residence.

The formula for provincial-municipal sharing of costs is determined by the province. In Newfoundland, general assistance is the responsibility of the province and is administered by the Department of Public Welfare. In Prince Edward Island, the Department of Welfare and Labour provides direct social assistance in rural areas and assumes 75 p.c. of the cost of assistance granted by the City of Charlottetown and the incorporated towns and villages; aid to needy families where the breadwinner is suffering from tuberculosis is borne entirely by the province. In Nova Scotia, assistance is administered by the municipality, which receives reimbursement from the Department of Public Welfare for two thirds of the cost of the aid provided and one half of the cost of administration; allowances for

certain disabled persons are administered by the province. In New Brunswick, the province reimburses each municipality to the extent of one dollar per capita of the population plus 70 p.c. of expenditures on general assistance in excess of that amount, and also pays 50 p.c. of the cost of administration.

In Quebec, the Department of Family and Social Welfare reimburses authorized agencies and municipal departments for the full cost of aid to persons in their own homes. It takes full responsibility for aid to persons who are unfit for work for at least 12 months, for supplementary allowances and allowances to needy widows and spinsters 60-65 years of age. The cost of aid to unemployable persons in homes for special care, including nursing homes, is borne two thirds by the province and one third by the institution. In Ontario, the municipalities administer all forms of aid available under the General Welfare Assistance Act. The Department of Public Welfare reimburses them up to a prescribed maximum for 80 p.c. of their expenditures, and for 90 p.c. of expenditures for aid to persons in excess of a given proportion of the population in the municipality. Aid for rehabilitation services and aid on behalf of foster children, for which the municipalities are reimbursed 50 p.c., are excluded in these calculations.

In Manitoba, the province administers aid to mentally or physically incapacitated persons whose disability is likely to last more than 90 days, and to persons unable to work because of their age. Aid to other needy persons, termed indigent relief, is the responsibility of the municipalities which are reimbursed through the provincial Department of Welfare to the extent of 40 p.c. of the costs, or at a higher rate if costs exceed a specified amount. In Saskatchewan, through the Department of Social Welfare and Rehabilitation, the province reimburses the municipalities for approximately 93 p.c. of the cost of assistance granted to needy persons. In Alberta, the province reimburses the municipalities for 80 p.c. of the value of the assistance given. The provincial Department of Public Welfare has full responsibility for allowances payable to persons who are mentally or physically handicapped for a period likely to last for more than 90 days, and to persons who because of their age are not able to be self-supporting. The Department maintains two hostels and one welfare centre to care for unemployable single homeless men without municipal domicile.

British Columbia, through its Department of Social Welfare, reimburses the municipalities on a pooled basis for 90 p.c. of the total cost of social assistance to needy persons. Also, the province shares equally with the municipalities expenditures on salaries of social workers; a municipality with fewer than 15,000 persons may arrange to have the Department undertake social work within the municipality and reimburse it at the rate of 30 cents per capita per year.

Subsection 3.—Services for the Aged

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. Voluntary homes generally are provincially inspected in accordance with prescribed standards and in some provinces must be licensed. Most provinces contribute to the maintenance of elderly persons in homes for the aged, either through general assistance or through statutes that relate particularly to these homes. Also, 50 p.c. of the payments on behalf of assistance cases in homes for the aged and infirm (homes for special care) are met by the Federal Government (see p. 305).

Several provinces make capital grants toward the construction of homes, and in five provinces capital grants are also available to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing.

Newfoundland maintains a home for the aged and infirm at St. John's and pays part or all of the cost of maintaining needy old people in homes for the aged and boarding homes. In 1955, a grant of 20 p.c. of costs, to be paid over a ten-year period, was made to a religious organization for the construction of a home, and provision is made for grants to similar projects under other auspices. The province is authorized by the Senior Citizens (Housing) Act, 1960 to guarantee the repayment of loans made under the National Housing Act to limited-dividend companies constructing hostels or housing for the elderly and to guarantee

the cost of operating such projects. The aged and infirm in Prince Edward Island are cared for in two institutions operated by the Department of Welfare and Labour. In Nova Scotia, the aged are cared for in municipal or county homes, in homes operated by religious or private organizations and in private boarding homes. The province reimburses the municipalities for two thirds of their expenditures for the maintenance of needy persons in municipal homes, subject to compliance with specified standards of care and accommodation. Homes for the aged receiving aid from the provincial government are subject to provincial inspection. Homes for the aged in New Brunswick are operated under municipal, religious, fraternal and private auspices and receive no direct financial support from the province. Voluntary and proprietary homes are subject to provincial licensing and inspection and must meet standards contained in regulations under the Health Act. Under the Social Assistance Act, 1960, the province contributes to the maintenance of needy persons in municipal homes.

Institutional care for indigent old people in Quebec is provided through charitable institutions under the Public Charities Act. The Homes for the Aged Act authorizes the province to erect and maintain homes for the aged and housing projects, or to make grants to voluntary organizations for this purpose. Standards in homes are governed by regulations under the Public Health Act.

Under the Ontario Homes for the Aged Act, municipalities must provide institutional or boarding-home care for the aged. The province contributes 50 p.c. of the costs of constructing approved homes and 70 p.c. of their net operating and maintenance costs. It also pays up to 70 p.c. of the costs of maintenance in approved boarding homes. Homes for the aged under voluntary auspices are approved, inspected and assisted under the Charitable Institutions Act, which provides for grants in aid of construction equalling 50 p.c. of costs up to \$2,500 per bed and maintenance grants of 75 p.c. of the amount spent by the organization up to \$3.40 per day for each resident. The Elderly Persons Housing Aid Act provides for grants to limited-dividend housing corporations building low-rental housing for elderly persons. In 1962 Ontario passed the Elderly Persons Social and Recreational Centres Act, the first of its kind in Canada. This Act enables groups of interested citizens to provide social and recreational centres for elderly residents of a community. The province will meet up to 30 p.c. of the cost of constructing or buying a building for such a centre if the local municipality contributes 20 p.c.

Institutions and boarding homes for the aged and infirm in Manitoba are supervised and licensed by the Department of Health and Public Welfare under public health legislation. Under the Elderly Persons Housing Act, the province makes construction grants to municipalities and charitable organizations equalling one third of the costs of constructing or acquiring and renovating housing accommodation and homes for the aged. Grants may not exceed \$1,400 for one-person housing units, \$1,667 for two-person housing units, \$1,200 per bed for new homes for the aged, and \$700 per bed for homes that have been renovated. Under the Social Allowances Act, 1959, the province bears the entire cost of assistance to those who, because of age or incapacity, require care for more than 90 days by another or in a home for the aged.

Aged and infirm persons in Saskatchewan are cared for in four provincial nursing homes and in voluntary homes for the aged. The latter are inspected and licensed under the Housing Act. This Act also empowers the province and municipalities to subscribe to the stock of limited-dividend housing companies building low-rental accommodation for older persons; the province may also make loans to municipalities to assist them in subscribing. Capital grants amounting to 20 p.c. of construction costs and maintenance grants of \$40 per bed per year may be made to municipalities, churches or charitable organizations sponsoring approved homes or housing projects. Costs of maintaining needy persons in homes for the aged are shared by the province and the municipalities under the Social Assistance Act.

Under what are termed 'master agreements', the Province of Alberta bears the cost of constructing and equipping homes for the aged and housing units on municipal land. Projects are operated by provincially incorporated foundations which include municipal

councilmen in their membership; net costs of operation are borne by the municipalities. The province also meets up to 80 p.c. of the cost incurred by municipalities for the maintenance of elderly persons in housing projects and municipal or private homes. Private homes are municipally licensed.

The Province of British Columbia operates a home for elderly homeless men, a provincial infirmary for the chronically ill and, for senile and psychotic patients, three provincial homes for the aged. It also licenses and supervises homes for the aged and boarding homes and, where necessary, shares with the municipalities on a 90-10 basis the cost of maintaining needy residents. Under the Elderly Persons Housing Aid Act, the province makes grants amounting to one third of construction costs to municipalities and non-profit corporations, including religious and service organizations, engaged in building homes or low-rental housing units for elderly citizens.

Subsection 4.—Child Care and Protection

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation and are administered by a division of child welfare within the provincial department of welfare. The program may be administered by the provincial authority or the responsibility may be delegated to local children's aid societies, that is, to voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments; in Quebec, child welfare services are administered by recognized voluntary agencies and institutions, religious and secular. In Newfoundland, Prince Edward Island, Saskatchewan and, to a large extent, in Alberta, they are administered by the province; in the larger urban centres of Alberta there is some delegation of authority to the municipality. In Ontario and New Brunswick, a network of local children's aid societies, operating under statutory authority, is responsible for the services. In Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province in other areas.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. Maintenance costs for children in care of a voluntary or public agency may be borne entirely by the province—as in Alberta, Manitoba, Prince Edward Island and Newfoundland—or partly by the municipality of residence and partly by the province.

The child welfare agencies, provincial or private, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proven, the court may direct that the child be returned to his parent or parents, under supervision, or be made a ward of the province or a children's aid society or, in Quebec, be placed under the authority of a suitable person or agency. The appropriate agency is then responsible for making arrangements to meet the needs of the child in so far as community resources permit. The services may involve casework with families in their own homes, or care may be provided in foster boarding homes, in adoption homes or, for children who need this form of care, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Adoptions, including those arranged privately, number about 13,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may need preparation for placement in foster homes, and also for teenage children who may find it easier to fit into a group setting than into a foster home. The development of small,

highly specialized institutions, which function as treatment centres for emotionally disturbed children, is of particular significance. Institutions for children are governed by provincial child welfare legislation or by special statutes dealing with welfare institutions, and by provincial or municipal public health regulations. The institutions are generally subject to inspection and in some provinces to licensing, and are usually required to make reports to the province on the movement of children under their care. Sources of income may include private subscriptions, provincial grants, and maintenance payments on behalf of children in care, payable by the parents, the placing agency, or the responsible municipal or provincial department.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. Support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Day nurseries for the children of working mothers are established only in the larger centres and chiefly under voluntary auspices. Licensing is required in five provinces but Ontario is the only province with a Day Nurseries Act. This Act sets out standards for operation and licensing and provides for provincial reimbursement of one half of the operating and maintenance costs of municipally sponsored day nurseries, which are established in most of the industrial centres in that province.

PART III.—HEALTH AND SOCIAL WELFARE EXPENDITURES

Section 1.—Government Expenditures on Health and Social Welfare

In the six fiscal years 1956-57 to 1961-62, total annual expenditures of all levels of government on health and social welfare increased from \$2,004,000,000 to \$3,679,000,000, or over 80 p.c. When the growth of population is taken into account, the increase was somewhat less—per capita expenditure advanced from \$125 to \$202, or about 60 p.c. Government expenditures may also be measured in relation to the national accounts; on this basis, government expenditures on health and social welfare rose over the period under review from 8.5 p.c. to 12.9 p.c. of the national income and from 6.5 p.c. to 9.8 p.c. of the gross national product.

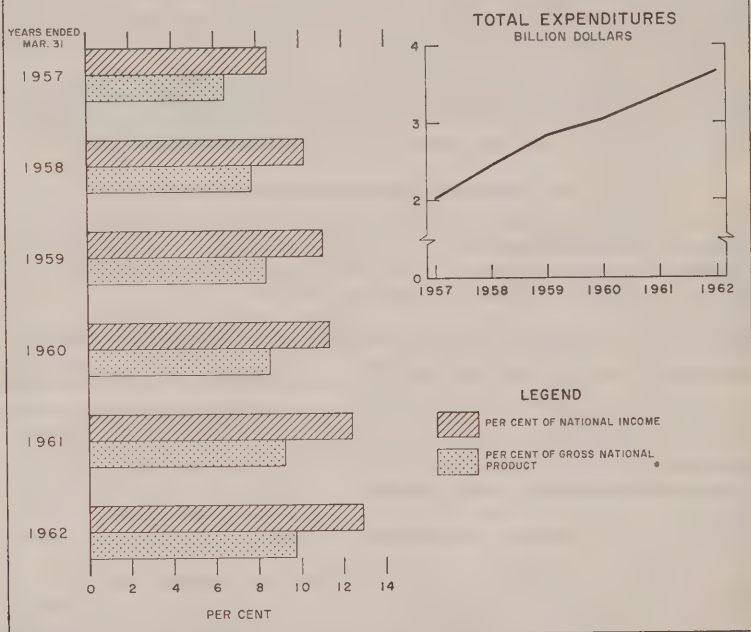
The federal share of health and social welfare expenditures increased from 70.0 p.c. in 1956-57 to a peak of 73.9 p.c. in 1958-59 and, conversely, the provincial and municipal shares fell, respectively, from 24.8 to 22.2 p.c. and from 5.2 to 3.9 p.c. However, since 1958-59, provincial expenditures increased more rapidly than federal expenditures mainly because of hospital insurance outlays which, although divided almost equally between the federal and provincial governments, form a relatively larger part of provincial expenditures on health and social welfare than they do of federal expenditures. As a result, the federal share dropped to 70.0 p.c. in 1961-62 and the provincial share rose to 27.0 p.c. The steady decline in municipal expenditures, in percentage terms, during the six years was attributable mainly to the introduction of hospital insurance which relieved the municipalities of much of the cost of hospital care for indigents.

Of considerable interest is the growing proportion of government expenditures on health and social welfare taken up by health programs. In 1956-57, health programs accounted for \$470,000,000 or 23 p.c.; by 1961-62, the outlays amounted to \$1,108,000,000 or 30 p.c.

An analysis of the principal components for the year ended Mar. 31, 1962 indicates the magnitude of the major programs and services. Family allowances payments amounted to \$521,000,000, old age security payments to \$625,000,000 and unemployment insurance benefits to \$455,000,000. Veterans pensions and allowances accounted for \$178,000,000 and \$75,000,000, respectively, and payments from the Prairie Farm Emergency Fund totalled \$54,000,000. These income maintenance programs were entirely the responsibility of the Federal Government. Federal-provincial income maintenance programs required expenditures of \$61,000,000 for old age assistance, \$5,000,000 for blindness allowances,

EXPENDITURES OF ALL LEVELS OF GOVERNMENT ON HEALTH AND SOCIAL WELFARE IN RELATION TO NATIONAL INCOME AND GROSS NATIONAL PRODUCT

YEARS ENDED MAR. 31, 1957-62



\$33,000,000 for disabled persons allowances and nearly \$200,000,000 for unemployment assistance, the latter figure including some municipal expenditure. Workmen's Compensation Boards spent \$94,000,000 on cash benefits for pensions and compensation and the provincial governments about \$48,000,000 on mothers' allowances.

Welfare services for Indians and for veterans and the national employment service accounted for \$36,000,000 at the federal level while child welfare services required an expenditure of almost \$34,000,000 by provincial governments.

In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled \$284,000,000 and grants for hospital construction and general health grants to the provinces and municipalities amounted to \$49,000,000. The Federal Government spent \$24,000,000 on the Indian and Northern Health Service and \$47,000,000 on hospital and treatment services for veterans. Provincial expenditures on hospital care amounted to an estimated \$524,000,000 and \$60,000,000 was spent on other health services. Workmen's Compensation Boards paid \$38,000,000 for medical aid and hospitalization. Municipal governments spent \$65,000,000 on health.

Altogether, these items accounted for expenditures of \$3,500,000,000 in the year ended Mar. 31, 1962.

1.—Total, per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1957-62

Year Ended Mar. 31—	Federal	Provincial	Municipal	Total
EXPENDITURES				
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1957.....	1,402.5	496.9	104.1	2,003.5
1958.....	1,755.1	572.1	112.6	2,439.8
1959.....	2,084.7	627.4	109.9	2,822.0
1960.....	2,162.2	762.1	106.4	3,030.7
1961.....	2,359.9	888.8 ^p	109.0	3,357.7
1962.....	2,575.8	994.0 ^p	109.0 ¹	3,678.8
PER CAPITA EXPENDITURES				
	\$	\$	\$	\$
1957.....	87.21	30.90	6.47	124.59
1958.....	105.67	34.44	6.78	146.89
1959.....	122.06	36.73	6.43	165.22
1960.....	123.67	43.59	6.09	173.35
1961.....	132.06	49.74 ^p	6.10	187.90
1962.....	141.23	54.50 ^p	5.98 ¹	201.71
PERCENTAGE DISTRIBUTION				
1957.....	70.0	24.8	5.2	100.0
1958.....	71.9	23.4	4.6	100.0
1959.....	73.9	22.2	3.9	100.0
1960.....	71.3	25.1	3.5	100.0
1961.....	70.3	26.5	3.2	100.0
1962.....	70.0	27.0	3.0	100.0

¹ Estimated.

Section 2.—Expenditures on Personal Health Care

Expenditures made on personal health care services, for the purposes of this Section, include the amounts spent by hospitals and the amounts received by physicians, dentists, pharmacists for prescription services, and by other paramedical professionals in the provision of health care and treatment directly to individuals. No attempt is made to include expenditures on public health, or public or private capital expenditures such as the building or extension of hospitals or other health facilities. Also excluded are the cost of administration of public health programs and other technical services as well as the cost of administering voluntary profit or non-profit health insurance plans. On the other hand, expenditures by the three levels of government on behalf of individuals are included.

In 1961, Canadians spent an estimated \$1,652,000,000 on personal health care, an amount two and one quarter times the \$735,000,000 so spent in 1953. The rate of increase averaged 10.8 p.c. during the period, varying from a minimum of 8.2 p.c. between 1954 and 1955 to a maximum of 13.6 p.c. between 1955 and 1956. Although the Canadian population rose during these years by 22.9 p.c., the expenditure figure increased even more rapidly so that the per capita expenditure on personal health care, which was \$49.50 in 1953 reached \$84.27 in 1960 and an estimated \$90.57 in 1961.

The proportion of the gross national production represented by expenditures on personal health care varied from 2.9 p.c. in 1953 to 4.5 p.c. in 1961, with a slight reduction between 1954 and 1955. In other words, one dollar in every \$22 of production in Canada in 1961 was for personal health care goods and services as compared with one dollar in \$34 for the year 1953.

2.—Expenditures on Personal Health Care, 1953-61

NOTE.—Figures exclude expenditures on public health and expenditures for capital purposes.

Year	Hospital Services					Physicians' Services	Pre-scribed Drugs ^{4,5}	Dentists' Services	Other ⁶	Total
	Active Treatment ¹	Mental ²	Tuberculosis ²	Federal ³	All Hospitals					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1953..	280.4	57.8	29.4	36.4	404.0	176.6	48.8	60.5	45.0	734.9
1954..	314.0	64.5	30.4	37.9	446.8	158.6	52.1	66.4	50.0	803.9
1955..	342.4	68.9	29.9	38.8	480.0	206.5	59.5	68.6	55.0	869.6
1956..	380.8	77.6	30.6	40.8	529.8	240.1	71.8	81.5	65.0	988.2
1957..	422.9	87.5	31.0	45.3	586.7	269.2	84.5	87.3	70.0	1,097.7
1958..	462.3	99.0	30.4	48.4	640.1	295.5	90.3	98.1	85.0	1,209.0
1959..	542.6	111.6	29.6	50.3	734.1	326.8	108.5	100.1	95.0	1,362.5
1960..	621.2	123.0	28.6	53.9	826.7	354.5 ⁴	107.3	112.4	105.0	1,505.9
1961 ⁵ .	704.6	132.8	28.3	58.1	923.8	383.2	111.1	118.8	115.0	1,651.9

¹ Includes gross expenditures of public and private acute, chronic and convalescent hospitals in 1953-57 and, in non-participating provinces, in 1958-60; includes gross expenditures of budget review and contract hospitals in 1961 and, in participating provinces, in 1958-60; excludes expenditures of mental, tuberculosis, and federal hospitals.

² Includes gross expenditures of public and private hospitals; excludes expenditures of federal hospitals.

³ Includes acute, chronic, convalescent, mental and tuberculosis hospitals of the Department of National Health and Welfare and the Department of Veterans Affairs; excludes hospitals of the Department of National Defence.

⁴ Sold by retail drugstores only.

⁵ Estimated.

⁶ Includes estimated expenditures for private duty nurses, and chiropractors, osteopaths, and optometrists; excludes all employees of hospitals.

PART IV.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning research and education, supplementing the services of the federal and provincial authorities in many fields and playing a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them. The functions of twenty important voluntary agencies are described in the 1962 Year Book at pp. 270-274.

Voluntary Medical Insurance.—About 8,800,000 Canadians, or 49 p.c. of the population of Canada, had some protection against the costs of physicians' services at the end of 1960. Their protection was provided by some 64 non-profit plans and at least 43 private companies. Non-profit enrolment was 5,100,000 while private companies provided surgical coverage to 4,250,000; overlapping enrolment in the two groups amounted to about 600,000. The 8,800,000 net total was 2,900,000 above the 1955 figure, which represented only 38 p.c. of the population.

The non-profit plans took in \$113,900,000 in premiums and \$2,200,000 in other revenue in 1960, paying out \$100,600,000 in benefits and \$9,600,000 for administration, leaving a surplus of \$5,900,000. Thus for every dollar of premiums, 88 cents were paid out in benefits. Benefit payments of non-profit plans amounted to \$19.76 per person covered in 1960. In 1955 benefit payments were \$41,400,000, which represented 89 cents of the premium dollar but amounted to only \$13.17 per person.

Profit-making private companies offer several classes of health protection—surgical, medical and major medical. Because surgical enrolment is most widespread and because an individual often must take out surgical insurance to be eligible for the other kinds, the surgical enrolment figure is regarded as indicative of total private enrolment. Benefit payments in all classes amounted to \$48,200,000 in 1960, or \$11.35 per person. In 1955, the total was \$19,300,000 and the ratio \$6.25.

PART V.—VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation comprising the Veterans Charter and provides administration facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary-General (Canada) of the Commonwealth War Graves Commission.

The main benefits now available to veterans consist of medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and widows' pensions and war veterans allowances. The work of the Department, excepting the administration of the Veterans' Land Act, is carried out through 17 district offices and five sub-district offices in Canada and one district office in England. There are seven Veterans' Land Act district offices and 25 regional offices established to administer the benefits of the Act.

Noteworthy during 1962 were the ceremonies held in Ottawa and in several provincial capitals to mark the 60th anniversary of the signing of the Peace of Vereeniging, which ended the South African War. At one of these ceremonies, the Book of Remembrance containing the names of 267 Canadians who gave their lives in that war and of 16 Canadians who died in the Nile Expedition in 1885 was dedicated by His Excellency the Governor General. At a similar ceremony held on Nov. 11, the Book of Remembrance honouring the 516 Canadians who died in the United Nations operations to restore peace in Korea was dedicated. These Books are displayed temporarily in the Memorial Chamber of the Parliament Buildings at Ottawa.

Section 1.—Treatment Services

Treatment Activity.—The Department of Veterans Affairs, through its Treatment Services Branch, provides medical, dental, and prosthetic services for entitled veterans throughout Canada. Service is also provided for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned.

The primary responsibility of the Branch is to provide examination and treatment to disabled pensioners for their pensionable disabilities. Other main groups of veterans receiving treatment are war veterans allowance recipients, veterans whose service and need make them eligible for domiciliary care, and veterans whose service and financial circumstances render them eligible for free treatment, or at a cost adjusted to their ability to pay. If beds are available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of treatment. The pensioner receives treatment regardless of his place of residence, but service to other veterans is available in Canada only. Where Departmental facilities are not available, the eligible veteran may receive treatment at the expense of the Department in an outside hospital by a doctor of his own choice.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Arrangements have been made for the payment of any necessary premiums on behalf of veterans who are in receipt of War Veterans Allowance. The Veterans Treatment Regulations remain the authority for the treatment of veterans (and others) in DVA institutions and elsewhere under Departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

* Prepared by the Department of Veterans Affairs, Ottawa.

Departmental hospitals provide base-hospital facilities for the treatment of members of the Armed Forces. Ste. Foy Hospital near Quebec City and Sunnybrook Hospital at Toronto have segregated units, fully staffed by Armed Forces personnel but utilizing all the ancillary facilities of the hospital. In other institutions the military personnel and patients are completely integrated throughout. Most DVA hospitals provide training facilities for members of the Canadian Forces Medical Service.

Patient load for the year ended Dec. 31, 1962, was as follows:—

<i>Item</i>	<i>No.</i>
Admissions to Departmental hospitals.....	53,859
Admissions to other hospitals.....	24,676
TOTAL ADMISSIONS.....	78,535
Patient-days in Departmental hospitals.....	2,550,186
Patient-days in other hospitals.....	845,092
TOTAL PATIENT-DAYS.....	3,395,278
Out-patient visits to Departmental hospitals.....	435,754
Out-patient visits to other Departmental clinics.....	91,737
Out-patient visits to doctor-of-choice.....	334,827
TOTAL OUT-PATIENT VISITS.....	862,318
Number of veterans treated under the Doctor-of-Choice Plan.....	207,049

Medical Staff and Training Programs.—Many of the professional staffs of active treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. Most members of the medical staff are engaged in teaching and private practice, and hold appointments on the medical faculties of the various universities.

In its active treatment institutions, the Department maintains medical teaching programs which are considered essential to attract highly qualified professional men and thus ensure the highest quality of medical care. All active treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in medicine and surgery, and the majority are approved also for advanced postgraduate training in the various specialties. An intern-resident training program is in effect and, at the end of 1962, there were 270 residents and interns in the medical specialties as well as 157 interns in occupational therapy, physiotherapy, psychology, laboratory, and medical social services.

During 1962, 83 Departmental employees attended courses, assisted fully or partly by the research and education vote. In addition, nursing assistants were trained at a school located at Camp Hill Hospital in Halifax. This school has an annual capacity of 70 graduates who are offered employment in Departmental hospitals across the country.

Medical Research.—During 1962, there were 89 projects in progress under the Clinical Research Program. The program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained Clinical Investigation Units have been set up in active treatment hospitals located at Montreal, Toronto, London, Winnipeg and Vancouver. (See also pp. 268-269.)

Hospital Facilities.—Treatment is provided in 11 active treatment hospitals located at Halifax, N.S., Saint John, N.B., Quebec City, Montreal and Ste. Anne de Bellevue in Quebec, Toronto and London in Ontario, Winnipeg, Man., Calgary, Alta., and Vancouver and Victoria, B.C.; also in a health and occupational centre at Ottawa, Ont., and in two domiciliary care homes located at Saskatoon, Sask., and Edmonton, Alta. The rated bed capacity of these institutions at Dec. 31, 1962 was 8,918 beds. It should also be noted that in Ottawa both acute and chronic cases that require definitive treatment are admitted to the National Defence Medical Centre. An additional 504 beds were available in veterans pavilions situated at Regina and Edmonton. Pavilions are owned by the Department but are operated by the parent hospital, and medical staff is provided by the Department.

A construction program for hospital rehabilitation continued throughout the year. A newly constructed 300-bed wing for Westminster Hospital in London, Ont., was opened in late summer; construction was completed of a DVA pavilion in the form of a 67-bed wing attached to the General Hospital at St. John's, Nfld.; and architectural plans were completed for a new Veterans Home at Saskatoon, Sask. A comprehensive report of the principal veterans' hospital projects completed and expenditures thereon during the years 1945-62 is given in the 1962 Year Book, pp. 276-278.

Dental Services.—Dental treatment supplied under Departmental auspices for the year 1962 consisted of 128,730 operations for 20,701 patients. Of this treatment, approximately 76 p.c. was provided in Departmental hospitals and clinics and the remainder by dentists-of-choice on a fee-for-service basis, in areas where Departmental facilities were not available. During 1962, the Department employed 36 dentists on a full-time basis and one on a half-time basis, and utilized the services of three dental consultants on a part-time basis. One-year dental internships were approved and inaugurated during the year.

Prosthetic Services.—The Department operates a Prosthetic Service which is responsible for the supply and maintenance of prostheses, orthopaedic appliances and sensory aid devices to veterans and other persons eligible for treatment under the Veterans Treatment Regulations; these appliances are issued only upon Departmental medical prescription and are supplied and serviced without charge. The Department also extends prosthetic service, upon request, on a repayment basis, to other Federal Government departments, to allied governments, to provincial governments under certain conditions and to workmen's compensation boards. During 1962, approximately 168,000 basic appliances, accessories and repairs were issued to 86,000 patients.

The physical establishment consists of a main factory at Toronto and 12 district manufacturing and fitting centres located in Departmental hospitals throughout Canada. District prosthetic technicians further extend service to five sub-districts by regular weekly or monthly visits. The Toronto factory manufactures certain prostheses, appliances and component parts, provides bulk purchasing of raw materials for distribution to other centres, provides advanced instructional courses for district staff, maintains a research section staffed by engineers and technicians and accepts, when necessary, referrals of cases for whom routine fitting procedures are considered inadequate.

A more comprehensive explanation of the operation of Prosthetic Services is contained in the 1961 Year Book, pp. 291-292.

Section 2.—Welfare Services

The Welfare Services Branch has specific responsibilities with respect to the administration of statutory benefits designed to assist veterans and their dependants and is equipped to give advice and help in any kind of problem that does not come under the jurisdiction of another branch of the Department. Branch personnel maintain close liaison with and have a detailed knowledge of sources of assistance in the community such as welfare departments at all levels of government, private philanthropic agencies, veterans organizations, etc. These contacts enable the Branch to make prompt and accurate referrals when required and to act as a channel through which the Department becomes aware of situations in which it can assist.

Activities under legislation designed to assist with immediate postwar rehabilitation of veterans lessen year by year. War service gratuities authorized under the War Service Grants Act (cash payments to each veteran of World War II, the amount varying with length of service and area in which it was performed) are now payable only in certain cases where delay of application is acceptable; 20 awards were authorized during 1962 for a total value of \$10,313. The awaiting returns allowance is now available only to veterans established in full-time farming under the Veterans' Land Act; during 1962 payments amounted to \$17,962 and there were 21 active accounts at the end of the year. The period of eligibility for training for veterans of World War II and for those who served in Korea has expired except for a few special cases. However, the Pensioners Training Regulations

provide a continuing authority for the training of pensioned veterans and of ex-members of the peacetime forces with disabilities attributed to military service. These regulations enable a pensioner who, because of his disabilities, cannot continue in a former line of work to qualify for another occupation. At the end of 1962 there were 28 trainees on strength, 16 of whom were registered in vocational courses and 12 in university courses.

Legislative changes made in 1962 mainly concern the deferment of the application date for benefits under several rehabilitation and assistance measures to Oct. 31, 1968. Amendments to the Children of War Dead (Education Assistance) Act provide for increased allowances to students when they reach the age of 21 and for certain extensions in the groups eligible for this assistance and in the periods during which it may be provided (see pp. 317-318).

Assistance measures still active are discussed in the following paragraphs. Veterans insurance and educational assistance to children of war dead are covered fairly fully; for other items more detail is given in previous editions of the Year Book.

Re-establishment Credit.—This benefit, authorized under Part II of the War Service Grants Act, is equal in each case to the war service gratuity, less the supplementary gratuity paid for overseas service. Except for balances of \$50 or less, it is not paid in cash to the veteran but is released on his behalf for specified purposes. From the coming into force of this benefit to the end of 1962, a total of \$314,276,145 has been paid out in re-establishment credits; unused balances totalled \$9,454,654 at the end of 1962. Eligible veterans may apply for this benefit up to Oct. 31, 1968.

1.—Re-establishment Credits Paid, by Required Purposes, 1961 and 1962

Purpose	1961	1962	Purpose	1961	1962
	\$	\$		\$	\$
Homes.....	1,101,754	602,974	Business.....	212,446	136,193
Purchased under National Housing Act.....	3,718	2,793	Purchase of a business.....	1,488	333
Purchased other than under National Housing Act.....	23,351	13,270	Working capital.....	23,722	19,452
Repairs, etc.....	157,059	86,672	Tools and equipment.....	187,236	116,408
Furniture and equipment.....	880,986	487,907	Miscellaneous.....	867,604	463,254
Reduction of mortgage.....	36,640	12,332	Insurance, annuities, etc.....	257,079	194,210
			Special equipment for training.....	8,799	5,675
			Clothing.....	346,265	178,244
			Reimbursements.....	255,461	85,125
			Totals.....	2,181,804	1,202,421

Casualty Rehabilitation.—The function of the casualty welfare program is outlined in the 1956 Year Book, p. 307. At Dec. 31, 1962, there were 1,408 active cases. The total number of disabled veterans then registered was 48,807 and of these 47,399 were closed cases. New cases opened during 1962 numbered 440 and cases closed numbered 1,829.

2.—Registrations for Casualty Rehabilitation, by Status of Applicant and Type of Disability, Dec. 31, 1962

Status	Registrants to—		Type of Disability	Active Cases as at Dec. 31, 1961	Total Closed Cases Dec. 31, 1961	Active Cases as at Dec. 31, 1962	Total Closed Cases Dec. 31, 1962
	Dec. 31, 1961	Dec. 31, 1962		No.	No.	No.	No.
Employed.....	38,208	38,419	Amputations.....	85	2,349	45	2,377
Unemployed.....	728	415	Neuro-muscular and skeletal system.....	828	14,282	447	14,643
Receiving treatment, training or other services.....	982	500	Total and partial loss of hearing or sight.....	168	3,342	96	3,406
Rehabilitation not feasible...	4,710	4,894	Neurological cases.....	89	1,740	49	1,777
Closed on WVA.....	2,733	3,233	Heart and vascular system...	162	4,442	92	4,585
Left Canada.....	1,330	1,346	Respiratory.....	658	12,099	354	12,398
			Mental and emotional.....	184	1,739	107	1,838
			Unclassified.....	363	6,161	218	6,375
Totals.....	48,691	48,807	Totals.....	2,537	46,154	1,408	47,399

Social Services.—The Social Service Division of the Department maintains a small corps of trained social workers who act primarily as consultants to other staff in dealing with problems of social adjustment affecting veterans and their dependants, but may give direct service in complex cases. They are especially concerned with maintaining liaison, for referral purposes, with welfare departments at all levels of government and with other philanthropic agencies. They assist in the work of the War Veterans Allowance District Authorities and other Departmental committees concerned with welfare matters and also supervise Branch services to dependants of members of the Armed Forces. On request by the Department of National Defence, the Branch furnishes reports on home circumstances of service personnel who encounter some domestic emergency. When the problem cannot be solved by counselling or referral to a source of help in the community, these reports assist the Department of National Defence in deciding whether compassionate leave, posting or discharge is indicated. During 1961 and 1962, the Social Service Division handled 12,405 and 9,160 requests, respectively, for service from all sources.

Assistance Fund (WVA).—The Assistance Fund (War Veterans Allowances) Regulations authorize supplementary payments to recipients under the War Veterans Allowance Act (pp. 325-326) who are living in Canada and are in need and whose incomes are lower than the maximum allowed by that statute. Assistance may be given as a continuing monthly grant in accordance with a formula which includes costs of shelter, fuel, food, clothing, personal care and certain health needs, or as single grants to meet emergencies. The maximum annual supplement available is \$288 for single recipients and \$360 for recipients at the married rate of allowance.

The administration of the Fund is directed by the Assistance Fund Committee of which the Deputy Minister is chairman. Applications are dealt with and grants authorized by district authorities in local offices of the Department in accordance with general instructions issued by the Committee. The following statement summarizes activity of the Fund during 1961 and 1962. Since monthly grants may be continued from year to year, the number of persons assisted in a given period is greater than the number applying.

<i>Item</i>		<i>1961</i>	<i>1962</i>
Persons assisted.....	No.	19,695	18,264
Persons applying during year.....	"	5,333	5,719
Applicants assisted.....	"	4,599	5,013
Proportion of applicants assisted.....	p.c.	86	88
Fund expenditures during year.....	\$	2,883,269	3,105,042
Proportion of expenditures given in monthly grants.....	p.c.	92	90
Persons in receipt of continuing monthly grants.....	No.	13,206	14,230

Older Veterans.—Details of the Department's work on behalf of the aging veteran population are given in the 1961 Year Book, pp. 294-296. Services and benefits for older veterans and their dependants are an increasing activity of the Department. The co-operation and goodwill of industrial and commercial organizations and the hiring policy of government agencies have resulted in the Corps of Commissionaires being able to maintain its position as the largest Canadian employer of older war veterans. Officials of the Welfare Services Branch of the Department continue to participate actively with agencies and committees dealing with the problems of older citizens and veterans.

Educational Assistance to Children of War Dead.—The Children of War Dead (Education Assistance) Act* is designed to help with the cost of post-secondary education for the children of those whose deaths have been attributed to military service. Eligible children may be assisted with the cost of training in Canada at any educational institution which requires high school graduation, matriculation or equivalent standing for admission. This includes not only universities and colleges, but also such facilities as hospital nursing schools and provincial technological institutes.

* A detailed study of this Act is given in the 1962 Year Book, pp. 282-283.

The maximum length of training is normally four academic years or 36 months whichever is the lesser. However, this may be extended if the required preparation for an occupation, such as medicine or law, takes longer and the student maintains a high academic standard. Assistance cannot be continued beyond the end of the academic year in which the student reaches age 25 except when training is extended beyond the normal four-year limit, in which case it can be continued, if necessary, to the end of the academic year in which the student reaches age 30. Training must commence within 15 months after the student completes secondary school, except in special cases, but assisted training cannot commence after the student reaches age 25. Fees are limited to \$500 per student for each academic year. An allowance of \$25 per month while in training is paid up to age 21. After that age, when payment under the Pension Act ceases, the allowance is increased to \$79 per month.

From its inception in July 1953 to Dec. 31, 1962, expenditures under this program totalled \$2,998,994 of which \$1,451,360 was spent in allowances and \$1,547,634 in fees. Applications approved totalled 2,923—1,440 for males and 1,483 for females. In addition to those who have completed or are in training as shown by Table 3, 323 had benefits deferred, 58 cases were suspended and 727 were discontinued for reasons other than the completion of training.

3.—Post-Secondary School and University Trainees under the Children of War Dead (Education Assistance) Act, by Sex and Type of Training, as at Dec. 31, 1962

Course or Faculty	Completed		In Training		Total
	Males	Females	Males	Females	
	No.	No.	No.	No.	
Post-Secondary School—					
Business administration.....	5	1	11	—	17
Commercial art and design.....	3	1	6	3	13
Nursing (Reg. Nurse).....	1	255	1	122	379
Secretarial.....	—	20	—	6	26
Teaching.....	17	114	12	23	166
Technology—					
Chemical.....	5	—	4	—	9
Electrical.....	2	—	2	—	4
Electronic.....	6	—	10	—	16
Laboratory.....	—	8	—	6	14
X-ray.....	—	7	—	—	7
Other.....	9	2	11	1	23
Other.....	2	2	—	2	6
Totals, Post-Secondary School.....	50	410	57	163	680
University—					
Arts and science.....	47	94	86	109	336
Agriculture.....	3	1	15	—	19
Engineering and applied science.....	57	—	104	1	162
Education.....	37	62	117	127	343
Commerce and business administration.....	31	7	46	14	98
Dentistry.....	1	—	7	1	9
Law.....	7	2	37	2	48
Medicine.....	7	3	34	12	56
Social work.....	3	13	4	23	43
Theology.....	4	1	16	—	21
Totals, University.....	197	183	466	289	1,135

Vetcraft.—A short history of Vetcraft is given in the 1959 Year Book, p. 293. Sheltered workshops are now operated at Toronto and Montreal, providing full-time employment for a number of veterans and widows; in addition, small assembly work is done in Winnipeg, Regina and Calgary, providing part-time home employment for other workers. Production for the year 1962, which was sold entirely to the Dominion Command of the Royal Canadian Legion, amounted to 6,909,077 poppies and 68,830 memorial wreaths and crosses.

Veterans Insurance.—The Returned Soldiers' Insurance Act (SC 1920, c. 54, as amended) provided eligibility to contract for life insurance with the Federal Government up to a maximum of \$5,000 to any one veteran of World War I. The low medical standard enabled many veterans unable to meet the medical requirements of commercial life insurance companies to secure protection for their immediate dependants. This insurance was on life plans with no provision for endowment or term insurance. Applications were accepted from 1920 to 1923 and from 1928 to 1933. No policies have been issued since Aug. 31, 1933. The following statement is a summary of operations as at the end of 1962:—

<u>Item</u>	<u>Policies</u>	<u>Amount</u>
	No.	\$
Policies Issued.....	48,319	109,299,500
1920 to 1924.....	33,577	75,728,600
1928 to 1933.....	14,742	33,571,000
Decreases 1920 to Dec. 31, 1962.....	40,217	92,103,190
Death claims.....	14,046	28,833,313
Surrenders.....	17,807	41,864,431
Lapses, extended term insurance expiries.....	8,730	20,152,589
Other terminations.....	834	1,252,852
Insurance in force Dec. 31, 1962.....	8,102	17,196,310

The Veterans Insurance Act (RSC 1952, c. 279, as amended) is the World War II counterpart of Returned Soldiers' Insurance and enabled veterans following their discharge and widows of those who died during service to contract with the Federal Government for a maximum of \$10,000 life insurance. Also eligible were certain other groups of persons, such as merchant seamen eligible to receive a war service or a special bonus, firefighters, auxiliary service supervisors, special operators, members of the Women's Royal Naval Services and the South African Military Nursing Service and persons receiving pensions relating to the War. Those qualifying by active Korean service are eligible to apply for veterans insurance until Oct. 31, 1968.

This Act makes it possible for veterans, unable to meet the required medical standards of commercial life insurance companies, to obtain insurance at standard rates for the protection of their immediate dependants. A medical examination, at no expense to the veteran, is required only in special cases. There have been 98 applications declined out of a total of 53,216 received.

The first policy was issued on Apr. 1, 1945 and in the immediate postwar years an average of over 5,000 policies a year were issued, attaining a peak of 8,825 in the year ended Mar. 31, 1948; in subsequent years the average has been 2,500.

The period of eligibility was originally limited to three years, i.e., to Feb. 20, 1948, and later increased to six years. In 1951 the period was again extended for an additional four years to Dec. 31, 1954, or ten years from discharge whichever was the later date. Section 12(3) of the War Service Grants Act provided that if a veteran of World War II had unused re-establishment credit sufficient to pay the initial premium, he or she might apply for Veterans Insurance up to Jan. 1, 1960, or fifteen years after discharge whichever was the later date. Purchase of veterans insurance through use of re-establishment credit was virtually the only way in which veterans residing outside of Canada used their credit benefits.

As a result of the termination of eligibility on Dec. 31, 1954, the only new applications for Veterans Insurance received from that date to Sept. 6, 1958 were those where premiums were being paid by the use of re-establishment credit. On Sept. 6, 1958 a further amendment to both the Veterans Insurance Act and the War Service Grants Act set a common cut-off date for the benefits of these Acts at Sept. 30, 1962. Also at this time, Sect. 10 of the Veterans Insurance Act was repealed. This Section limited the payment of the proceeds of a policy to a widow or child of the insured in the event of a pension under the Pension Act being paid to such persons on the insured's death. By the repeal of this Section, the

award of a pension under the Pension Act on the death of a policyholder would have no bearing on the amount of the policy proceeds. The effect of the repeal was a sharp increase in the number of applications. In the following six months, approximately 2,000 were received as compared with 300 for the preceding six months; since then applications have been received at the average rate of 150 a month to the end of 1962.

The most recent change in legislation was made on Feb. 15, 1962 when Royal Assent was given to a common cut-off date of Oct. 31, 1968 for eligibility under the Veterans Insurance Act, the War Service Grants Act and the Veterans Benefit Act (1954).

The amount of insurance on the life of any one person may not exceed \$10,000, issued in multiples of \$500. The insurance, which is non-participating and with no endowment feature, may be obtained on a 10- 15- or 20-year payment life plan or provides for premium payments until the policy anniversary nearest the insured's age of 65 or 85. Premiums may be paid in cash from a pension under the Pension Act, from Civil Service or Armed Forces salaries or from re-establishment credit. There is a disability provision under the policy which provides for a waiver of premiums to a policyholder in the event of a total and permanent non-pensionable disability; some 70 policies are being carried on this waiver-of-premium basis.

There is a cash surrender value available to a policyholder who has kept premium payments up to date on a policy that has been in force for at least two years. No loans are permitted on a policy and the contract is not subject to liens or attachment by creditors. There is also an alternative reduced paid-up value and automatic extended term provision included in each policy contract.

A married veteran is required to name his spouse or child as beneficiary. Parents, brothers, sisters, grandchildren, etc., form a contingent beneficiary class. If the veteran is unmarried or a widower without children, a future spouse is named as preferred beneficiary with the same class of contingent beneficiaries required as those for a married person. In the event of the death of the insured without a spouse or child surviving and no named contingent beneficiary survives, the policy proceeds will be paid to the estate of the insured. In general, the amount payable to a beneficiary as an immediate death benefit may not exceed \$2,000, the remainder being paid as an annuity. There are several types of annuities available from a minimum of five years to a life annuity.

The following statement is a summary of operations as at Dec. 31, 1962.

Item	Policies	Amount
	No.	\$
Policies issued at Dec. 31, 1962.....	51,395	166,348,500
Decreases to Dec. 31, 1962.....	20,715	69,617,805
Not taken.....	66	280,600
Net lapses (lapses less reinstatements).....	2,028	7,954,000
Surrenders (14,224 total 637 partials).....	14,224	47,296,096
Decreases to reduced paid-up insurance (420).....	...	1,261,146
Decreases by change of age (26).....	...	4,300
Extended term insurance expires.....	958	3,122,733
Death claims received including unpaid claims awaiting proof....	3,439	9,709,050
Insurance in force Dec. 31, 1962.....	30,680	96,730,695

4.—Death Claims Intimated to Dec. 31, 1962

Year	Returned Soldiers Insurance		Veterans Insurance	
	No.	\$	No.	\$
1921-57.....	11,469	23,819,439	1,576	4,419,236
1958.....	486	902,324	254	687,145
1959.....	436	835,327	283	806,546
1960.....	462	928,255	357	1,096,010
1961.....	422	867,230	364	947,148
1962.....	435	839,709	394	1,185,463

Section 3.—Land Settlement and Home Construction

The Veterans' Land Act provides for the settlement of veterans of World War II and the Special (Korean) Force under five broad categories: farming as a full-time occupation; part-time farming in rural or semi-rural areas to supplement income from other employment; commercial fishing; land settlement, generally in pioneer areas, under agreements between the Federal Government and the provinces; and home building on city-size lots by veterans who have been approved for a loan under the National Housing Act and who act as their own contractors.

To keep pace with increases in the cost of land and house construction, and to provide a source of credit to veterans settled on small family farms, a number of important amendments of a financial nature were made to the Act in April 1962. These included provisions which increased the total assistance available, authorized additional loans under Part III to part-time farmers already settled, and extended the maximum repayment period to a uniform term of 30 years. Another major amendment provided authority for the Director to enter into a group life insurance contract on behalf of veterans desiring mortgage insurance coverage relative to their indebtedness to the Director.

The financial assistance available under Part II to veterans for the construction of their own homes on city-size lots was increased from \$10,000 to \$12,000 and the minimum initial equity required of each veteran was raised from \$800 to \$1,000. The ceiling on loans under Part III to veterans being settled as part-time farmers was increased from \$3,000 to \$4,800. To obtain a loan of this amount, a veteran must contribute in cash or equity, or both, the sum of \$1,200 calculated on the basis of \$1 for each \$4 borrowed; previously, the ratio was \$1 to \$3. These two changes provide a maximum expenditure under Parts I and III of \$12,000, an increase of \$2,000 over the former limit.

Prior to the amendments, Part III loans to part-time farming veterans were available only at the time of their establishment. It was found that this prohibition against the approval of additional financial assistance, for home improvement purposes subsequent to settlement, created problems for both the veterans and the Administration. As a result of the legislative change made in this connection, Part III loans of up to \$4,800 can now be made to part-time farming veterans on the same basis and terms as apply to such loans made to veterans being established.

The major amendments to the Act in 1959 provided that additional loans under Part III to full-time farming veterans could be made only where the funds were required for the development and proper operation of an economic farm unit. Although this provision was sound in principle, and a substantial number of loans have been made, it nevertheless served to preclude the extension of credit to veterans settled on small family farms. Such a unit is considered to be one which provides the owner and his family with an acceptable standard of living but which is not capable of producing a large enough gross and net income to be classed as an economic or commercial farm unit.

In recognition of the place which small family farms have in the agricultural industry of the country, and of the financial requirements of their operators, one of the amendments made in 1962 provided for fully repayable, 5-p.c. loans under Part III of up to \$6,000. The total assistance available to veterans established on this type of unit is now \$12,000, or 75 p.c. of the market value of the land, whichever is the lesser. This additional credit may be used for the purpose of acquiring land, effecting permanent improvements to land and buildings, the purchase of basic herd livestock, and the payment of debts that relate to or were reasonably incurred in the operation of the farm.

As a result of the above-mentioned financial changes and the reduction effected in 1961 of the minimum acreage requirement for part-time farming settlement down to one half of an acre, there was a further substantial increase in loaning operations during 1962. Financial assistance approved on behalf of veterans during the year totalled \$41,070,549 as compared with \$32,712,389 in 1961. There were 5,892 loans made during 1962, an increase of 1,842 over the number made in the preceding year.

From the inception of the Act to the end of 1962, 92,421 veterans have received financial assistance and more than \$558,000,000 expended for this purpose. There were 52,649 active accounts under administration at the end of 1962, including accounts of 375 Indian veterans settled on Indian reserves which are administered by the Indian Affairs Branch of the Department of Citizenship and Immigration. A total of 43,524 veterans, including 1,234 Indian veterans, have earned their ten-year conditional grants amounting to more than \$80,000,000. Over \$250,000,000 has been repaid. In addition to the principal repayments, more than \$70,000,000 has been received in interest, of which almost \$6,000,000 was received in 1962. The active accounts under administration have a remaining indebtedness of nearly \$225,000,000.

To the end of 1962, there were 30,500 houses completed and a further 1,200 were in the process of construction. There were 1,256 houses started during the year and 1,216 completed. A further 2,181 veterans received approval to effect additions or improvements to their homes and other buildings in 1962 as compared with 909 in 1961.

During the year, veterans continued to maintain a very favourable repayment record. The amount collected and applied to the Consolidated Revenue Fund from current active accounts represented 103.9 p.c. of the total due and owing on 51,280 repayable contracts. There have been very few instances where it has been necessary to rescind a contract; during 1962 there were 15 such cases bringing the total since inception of operations to only 230.

A major factor contributing to the favourable repayment record of VLA settlers is that more than 24,000 veterans have adopted one of the various pre-arranged payment plans made available to them. In addition, 1,030 Share-of-Crop Agreements were in effect in the Prairie Provinces in 1962, almost 200 more than in 1961. This increase was the result of an amendment made during the year to the Veterans Land Regulations, extending the previous provisions, which related only to the delivery of wheat by veterans settled in the spring wheat areas of the Prairie Provinces, to the delivery of oats, barley, flax, rye and rapeseed.

5.—Summary of Settlement and Expenditures under the Veterans' Land Act, as at Dec. 31, 1962

Item	Full-Time Farming	Small Holdings	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Approved for financial assistance.....No.	29,703	50,512	1,221	4,907	530	1,650	3,898	92,421
Amount of public funds expended.....\$	201,672,020	302,424,619	5,434,452	10,766,524	1,135,684	3,674,704	33,684,516	558,792,519
Approximate average expenditure per approval.....\$	6,718	5,912	4,451	2,194	2,143	2,227	8,641	5,960
Total conditional grants earned.....No.	19,671	18,085	666	3,674	194	1,234	—	43,524
Average amount of grants earned.....\$	2,066	1,494	1,831	2,294	2,340	2,275	—	1,998
Grants earned, title released.....No.	8,434	8,667	301	3,674	194	1,234	—	22,504

6.—Summary of House Construction under the Veterans' Land Act, as at Dec. 31, 1962

Item	Full-Time Farming	Small Holdings	Commercial Fishing	Provincial Lands	Federal Lands	City-Size Lots	Total
	No.	No.	No.	No.	No.	No.	No.
Houses completed (from 1942).....	2,053	22,890	301	1,415	126	3,714	30,499
Houses under construction.....	74	637	5	5	3	176	1,200
Contracts let (work not yet started).....	129	510	6	85	1	—	731
Net Approvals for New Housing..	2,256	24,337	312	1,505	130	3,890	32,430

Section 4.—Veterans' Bureau

The main duties of the Veterans' Bureau, which is a branch of the Department of Veterans Affairs, are to assist former members of the Armed Forces and their dependants, and former members of the various auxiliary organizations, such as merchant seamen, fire-fighters and others, in preparing and presenting pension claims to the Canadian Pension Commission.

Now in its thirty-second year of operation, the Veterans' Bureau is headed at Ottawa by an officer known as the Chief Pensions Advocate, who is assisted by pensions advocates, most of whom are lawyers, located in all districts in Canada in which offices of the Department are maintained, and at the district office in London, England.

The pensions advocates also appear as counsel for applicants before the Appeal Boards of the Commission, and, in addition, they advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on the applicant's pension claim. No charge is made for the services of the Bureau.

During the year ended Dec. 31, 1962, the Veterans' Bureau submitted a total of 7,095 claims to the Canadian Pension Commission for adjudication. This number included 1,322 claims presented to Appeal Boards of the Canadian Pension Commission of which 51 p.c. were wholly or partially granted. During the same year, the Bureau submitted 1,298 straight entitlement claims to the Canadian Pension Commission, based on service in World War I and peacetime, of which 192 were wholly or partially granted. However, with respect to claims based on service in World War II and Korea, out of a total of 3,357 presented, 1,153 were wholly or partially granted. In addition, 1,118 miscellaneous claims were submitted to the Canadian Pension Commission (including applications for leave to re-open following an Appeal Board hearing, claims for higher degree of aggravation, increased assessment, retroactive awards, compassionate pension awards, etc.), of which 493 were wholly or partially granted.

Section 5.—Veterans Pensions

Canadian Pension Commission.—The Canadian Pension Commission is a statutory body charged with the administration of the Pension Act and the Civilian War Pensions and Allowances Act. The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs.

It is the responsibility of the Commission to adjudicate on claims for injury or disease resulting in disability or death, incurred during service with the Canadian Navy, Army or Air Force during war or peacetime. The Commission may also supplement, up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II, or may pay pension at Canadian rates in such cases where the claim has been rejected by the government of the country concerned. The Commission's representatives, called pension medical examiners, are located in most of the district offices of the Department of Veterans Affairs across the country.

The Pension Act.—Previous issues of the Year Book contain information on the development of Canadian pension legislation together with yearly statistics of numbers and liabilities. The Pension Act has not been amended since 1961. The major amendments at that time, which resulted in increased benefits, are summarized in the 1962 Year Book, p. 287.

Disability pension is payable to former members of the Armed Forces who suffered "the loss or lessening of the power to will and to do any normal mental or physical act" as a result of military service in the Canadian Navy, Army or Air Force since the com-

mencement of World War I. The place of residence and economic circumstances of the recipient have no bearing on the amount of pension that may be paid, pension being payable in accordance with the degree of disability found to exist on medical examination from time to time. Similarly, pension to a widow whose husband's death was incurred on or attributable to service is not affected by her place of residence or economic situation.

The annual rates for a 100-p.c. disability for all ranks up to and including that of Colonel and equivalent rank are:—

	£
Pensioner.....	2,160
Wife.....	720
One child.....	324
Two children.....	564
Each additional child.....	192

For assessments lower than 100 p.c., the awards are proportionately less. The rate of personal pension is higher if the pensioner held a rank higher than Colonel or equivalent rank at the time the disability was incurred, but the additional pension for wives and children remains the same for all ranks.

Attendance allowance, which is payable to a pensioner who is totally disabled, helpless and in need of attendance, and which varies from a minimum of \$480 to a maximum of \$1,800 depending on the degree of attendance required, is paid in addition to pension. While a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable.

The annual rates of pension for widows and children of all ranks up to and including that of Colonel and equivalent rank are:—

	£
Widow.....	1,656
One child.....	648
Two children.....	1,128
Each additional child.....	384

Rates for widows are higher if the deceased veteran held a rank higher than that of Colonel or equivalent rank, but those for children remain the same for all ranks.

The Civilian War Pensions and Allowances Act, Parts I to X, provides for the payment of pensions to or on behalf of persons who served in certain civilian groups that were closely associated with the World War II war effort and who suffered injury or death as a result of such service; these include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in Britain, etc.

7.—Pensions in Force under the Pension Act, as at Dec. 31, 1962

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	£	No.	£	No.	£
World War I.....	41,485	38,876,610	14,465	23,084,552	55,950	61,961,162
World War II.....	106,361	85,006,464	16,773	22,841,631	123,134	107,848,095
Peacetime.....	1,628	1,035,295	545	1,048,521	2,173	2,083,816
Special Force.....	1,738	1,191,275	179	274,248	1,917	1,465,523
Totals.....	151,212	126,109,644	31,962	47,248,952	183,174	173,358,596

Over 91 p.c. of the amount paid in pensions is distributed in Canada and the balance to pensioners residing in other parts of the world. While the total number of awards in force is 183,174, the number of persons on whose behalf pension is payable under the Pension Act is approximately one-half million. These include disability pensioners, their wives and children, and their dependent parents; widows and their children; orphan children; and dependent parents of deceased members of the Forces.

The total number of World War I disability and dependant pensions in force at Dec. 31, 1961 was 58,339 and for World War II, 122,904. During 1962, World War I pensions decreased by 2,389 and World War II pensions increased by 230; 203 new awards of disability pension were authorized in respect of World War I veterans and 2,251 in respect of World War II veterans.

Section 6.—War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board.—The War Veterans Allowance Board is a statutory body that administers the War Veterans Allowance Act and reports to Parliament through the Minister of Veterans Affairs.* The Board, consisting of eight members, including a chairman and a deputy chairman, appointed by the Governor in Council, is a quasi-judicial body and is independent as far as its decisions are concerned. The Minister of Veterans Affairs is charged with the administration of the Act.

During the past year, the Board was given the responsibility for administering Part XI of the Civilian War Pensions and Allowances Act, which authorizes payment of allowances to certain groups of civilians who performed meritorious service in a theatre of actual war during either World War I or World War II. The provisions of this Part are similar to those of the War Veterans Allowance Act.

War Veterans Allowance Act.—The War Veterans Allowance Act came into force on Sept. 1, 1930, its purpose being to aid war veterans who, because of the hardships of service, had become pre-aged and no longer able to hold their places on the labour market. The administration of the Act was entrusted to what was then the War Veterans Allowance Committee, later re-designated the War Veterans Allowance Board.

The Act has been amended 11 times since 1930, its scope broadened and the allowance rates and income ceilings increased from time to time. By the amendments of 1950, the Act established District Authorities in the regional districts of the Department of Veterans Affairs, granting to them the full and unrestricted power and authority and exclusive jurisdiction to deal with and adjudicate upon all matters and questions arising under the Act relating to the award, increase, decrease, suspension or cancellation of any allowance awarded or paid under the Act. The members of a District Authority are employees of the Department of Veterans Affairs, appointed by the Minister with the approval of the Governor in Council. A District Authority consists of not less than four and not more than seven persons, its strength being related to the size of district and the volume of matters to be handled. There are 19 District Authorities, including the Foreign Countries District Authority located in Ottawa. An application for an allowance must be made to the District Authority of the regional district in which the applicant resides.

The War Veterans Allowance Board acts as an appeal court for applicants and recipients aggrieved by the decision of the District Authority, and the Board may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for guiding and instructing the District Authorities in the interpretation of policy, and for advising the Minister with respect to regulations governing the procedure to be followed in matters coming before District Authorities for adjudication.

During 1962, the Board reviewed 7,305 recipients' cases, comprising referrals by District Authorities and Treasury Officers, rulings on service eligibility and guidance on policy interpretation. The Board conceded service eligibility for 433 applicants under the

* A detailed outline of the Board's functions and responsibilities is given in the 1961 Year Book, p. 302.

War Veterans Allowance Act from allied veterans and for 745 applicants under the Civilian War Pensions and Allowances Act, Part XI. The Board also adjudicated 871 appeals during the year, of which 587 were disallowed and 242 allowed, the remainder being deferred or withdrawn by the appellants. The Board must also adjudicate each case where the widow was not residing with her spouse at the time of his death. Of these applications, 132 were approved and 37 declined.

The number of veterans and others in receipt of allowances at the end of the years 1956-62, together with the amounts paid, were:—

<i>At Dec. 31—</i>	<i>Veterans in Receipt of Allowances</i>	<i>Dependants in Receipt of Allowances</i>	<i>Total in Receipt of Allowances</i>	<i>Expenditure</i>
	No.	No.	No.	\$
1956.....	39,543	15,193	54,736	40,853,773
1957.....	41,820	16,601	58,421	45,187,400
1958.....	45,466	18,659	64,125	53,970,728
1959.....	47,393	20,141	67,534	56,927,614
1960.....	48,521	21,421	69,942	58,207,130
1961.....	51,537	23,373	74,910	69,825,747
1962.....	54,168	25,302	79,470	81,176,162

During 1962, the War Veterans Allowance District Authorities considered 13,520 applications, approving 9,602 and declining 3,918. To ensure continued eligibility of existing War Veterans Allowance recipients, 37,918 recipients were interviewed and their circumstances checked. A further 35,407 cases were reviewed by checking their declared assets and income.

Part XI of the Civilian War Pensions and Allowances Act.—Part XI of the Civilian War Pensions and Allowances Act, which became effective on Feb. 23, 1962, provides allowances to certain civilians with service in a theatre of actual war during either World War I or World War II. These civilians include Canadian merchant seamen of either war who served at least six months at sea with one trip through dangerous waters; non-Canadians with similar service on Canadian merchant vessels in either war; Canadian members of the Voluntary Aid Detachment of the British Red Cross of World War I with service on the Continent of Europe or service in Britain for at least 365 days prior to Nov. 12, 1918; and the following civilians of World War II with six months overseas service—Canadian welfare workers, Canadian firefighters, Canadian transatlantic air crew and personnel of the Newfoundland Overseas Forestry Unit. A pensioner under Parts I to X of the Act is also eligible.

The number of recipients under this Act at Dec. 31, 1962 was 420, which included 334 civilians, 85 widows and one orphan, with an annual liability of \$461,679. The restrictions governing income, personal property limits and real property and the monthly rates of allowances are the same as those provided in the War Veterans Allowance Act (see p. 289 of the 1962 Year Book).

Section 7.—Commonwealth War Graves Commission

The Imperial War Graves Commission was incorporated on May 21, 1917, under the Royal Charter granted by His Majesty in Council on a recommendation made by the Imperial War Conference in April of that year. The name was changed by a supplemental Royal Charter on Apr. 1, 1960, to the Commonwealth War Graves Commission. The Governments of Britain, Canada, Australia, New Zealand, South Africa, India and Pakistan are members of the Commission. South Africa, after becoming a republic, requested and obtained permission from the other Commonwealth Governments to remain a member of the Commission and is represented by an Ambassador in London. The Minister of Veterans Affairs is the Agent of the Commission in Canada and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

The Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921, and between Sept. 3, 1939 and Dec. 31, 1947, and with the erection of memorials to commemorate those with no known grave. In many of the cemeteries and plots a central feature is the Cross of Sacrifice or the Great Stone of Remembrance.

The area of responsibility of the Canadian Agency is the Continent of North America but it has also certain duties of inspection in Argentina, the Bahamas, Barbados, Bermuda, Brazil, British Guiana, British Honduras, Chile, Costa Rica, Cuba, Falkland Islands, French West Indies, Guatemala, Hawaiian Islands, Jamaica, Leeward Islands, Netherlands Antilles, Panama Canal Zone, Peru, Puerto Rico, Trinidad, Uruguay and Windward Islands.

In North America the Agency has commemorated 18,944 Commonwealth war dead in almost 3,000 cemeteries. Approximately 4,100 servicemen of both Wars, missing in operations while based in North America, are commemorated on memorials erected at Victoria, B.C., Halifax, N.S., and Ottawa, Ont. In Oakwood Cemetery, Montgomery, Alabama, the Agency has erected the only Cross of Sacrifice in the United States.

The Agency was instrumental in bringing together officials of the Netherlands War Graves Committee, the Royal Canadian Legion and the Department of Veterans Affairs for the purpose of planning a pilgrimage to enable relatives from Canada to visit the graves of Canadian war dead in the Netherlands.

CHAPTER VII.—EDUCATION AND RESEARCH

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—FORMAL EDUCATION*

Formal education has become one of the major concerns of government and society in Canada and is now recognized as the key to both individual and national prosperity. Machines and automated programs are performing an ever-increasing number of routine, repetitive tasks, thus reducing the job opportunities for untrained workers and at the same time opening up whole new fields for highly skilled personnel. As a result, education authorities face the dual task of building and staffing schools and universities at a hitherto unprecedented rate and of adjusting curricula to fit in with a rapidly changing state of society.

The absolute and relative growth of formal education in Canada is indicated by the fact that between 1948 and 1961 average daily attendance at public elementary and secondary schools doubled while the country's population increased by only 42.5 p.c. during the same period. Over this period, total expenditure on formal and vocational education and training increased by 382 p.c. and its proportion of the gross national product increased from 2.5 p.c. to 4.9 p.c. University enrolments increased from 86,800 in 1957 to over 141,400 in 1962 and the sharpest increases are still to come as the population bulge resulting from the great increase in births in the immediate postwar years is beginning to reach university-age level.

* Prepared in the Education Division, Dominion Bureau of Statistics.

Section 1.—Administration and Organization of Education in Canada

With certain exceptions, laws relating to formal education in Canada are a provincial, rather than a federal, prerogative. As a result, each province has organized a system of education to meet its own needs and, although they have much in common, no two systems are identical. Quebec and Newfoundland exhibit the greatest divergence from the general pattern, the former because of its French and Roman Catholic background and the latter because of the continuance of a system developed when the province was an independent British Colony.

To meet their responsibilities in the field of education each of the ten provinces has a government Department of Education; the first was organized in Quebec in 1846 and the last in Newfoundland in 1920. Except in the Province of Quebec, the Department is headed by a provincial Cabinet member who serves as Minister of Education. The Minister is appointed by the Lieutenant-Governor on the recommendation of the Premier from among elected members of the Provincial Legislature. In Quebec, the senior professional educationist, the Superintendent of Education, is appointed by the Lieutenant-Governor in Council and remains in office during good behaviour or unless the Legislative Council and Legislative Assembly both request his withdrawal. He is President of the Council of Public Instruction, which is composed of a Roman Catholic Committee and a Protestant Committee. The Department of Education deals with matters of administration, finance and inspection and the Lieutenant-Governor in Council has authority to approve or disallow regulations prepared by the two Committees. A Quebec Royal Commission has recommended a reorganization of the administration of education to more closely resemble that in the other provinces.

Elementary and Secondary Schools.—Formal education at the elementary and secondary levels is administered from the provincial Departments of Education which operate under provincial school law or laws, issue regulations, and provide services to public schools throughout the province (including separate schools in those provinces where such schools exist). In addition to administering various grants, the provincial departments, among other things: operate teacher-training colleges or arrange for the universities to offer preparatory education courses; issue teachers' certificates; issue courses of study for the elementary-secondary schools; prescribe textbooks or lists of books; employ school inspectors or superintendents; conduct end-of-the-year examinations for the final year or two of high school; and issue certificates to successful candidates. In some provinces other departments of government may have responsibilities for special schools or courses. For example, in Quebec the Department of Education, its services and financial contributions come under the jurisdiction of the Department of Youth and a few schools are maintained by other departments, such as Schools of Agriculture, a School of Fisheries and a Forestry Station which operates three schools.

Provision for separate schools for Roman Catholics is handled differently in different provinces. In Ontario, Saskatchewan and Alberta (as well as in the Yukon and Northwest Territories), the first school established in a community is known as the *public school*, which is open to all children in the community. The school law provides, however, that a religious minority (which in these provinces is usually Roman Catholic) may establish its own school board and school. Such schools are referred to as *separate schools*. Local residents may elect which school they choose to support through taxes, their choice generally being determined by their religion. Both public and separate schools come under the jurisdiction of

the provincial Department of Education and both receive provincial grants. In Ontario, but not in the other two provinces, legal provision for separate schools does not extend beyond Grade 10.

In the three Maritime Provinces and Manitoba there is no legal provision for separate schools. However, within the public school systems of these provinces, there are English-language and French-language Roman Catholic schools in areas that have large English or French Roman Catholic populations, such as St. Boniface in Manitoba and Edmundston in New Brunswick. On the other hand, the public school system of British Columbia makes no provision for any type of denominational schools. Any such schools in this province must operate as parochial or private schools.

In Quebec, public elementary and secondary schools are controlled by the Roman Catholic and Protestant Committees of the Council of Public Instruction. In this province, Catholic and Protestant school systems exist side by side from the Department down, each relatively independent of the other. To some extent, the Catholic system follows the French tradition of education while the Protestant system follows the English tradition and is very similar to the Ontario system. Private or independent schools play a much more prominent role in Quebec than in other provinces. Chief among these are the classical colleges, which number nearly a hundred. Affiliated to the French-language universities (Laval, Montreal and Sherbrooke), they offer an eight-year course, entered after completion of elementary school and leading in two four-year stages, secondary and college, to the baccalaureate degree.

Newfoundland might be said to have a public denominational school system. Each of the five major religious denominations in the province—Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Assemblies—operates its own schools under a superintendent of education who is responsible to the Deputy Minister of Education. The Minister of Education, the Deputy Minister and the five superintendents form a Council of Education which decides on policy and co-ordinates the various parts of the system. One curriculum serves the schools of all denominations. Teachers receive common training in the Memorial University of Newfoundland, a provincial institution.

Local School Organization.—Within the framework of each provincial jurisdiction and regulation, public education is administered by local education authorities operating under a school Act. These school boards or boards of education are responsible for establishing and maintaining schools, employing qualified teachers, providing pupil transportation where needed, and budgeting for the money required to operate the schools, which is raised through local taxation. Local boards may be elected, appointed, or partly elected and partly appointed. They differ in number of members from three in the case of most small rural units to five, seven, or even twelve or more for urban units. Where larger units in rural areas have been established, there are central boards for the units representing the component districts, although there may be local boards retaining some custodial and advisory duties.

The larger unit, replacing rural districts which were usually about four miles in extent, has been introduced by legislation in several provinces and made optional in others in an effort to provide better school facilities and greater equalization of costs and to mitigate the problems caused by a chronic shortage of teachers. Larger units have been established by legislation in Alberta and British Columbia and by Acts with provision for local option in Saskatchewan and the Maritime Provinces. Southern Ontario has been gradually organizing its rural areas into township and county units; Manitoba has recently introduced legislation leading to the formation of larger units of administration for secondary schools;

and Protestant Quebec has been essentially organized into larger units. In Roman Catholic Quebec, one board of commissioners administers all Roman Catholic schools in a school municipality, whether rural or urban, while secondary education is being consolidated more and more into larger central secondary schools. In that province, there have always been more private residential schools established by religious groups than elsewhere.

Higher Education.—The jurisdiction of provincial Departments of Education embraces only the elementary and secondary levels, which provide for the education of youths up to age 17 or 18. The extension of general education beyond the secondary to the college or university level is referred to as "higher" education, at which point the student is offered a wide diversity of courses in the arts, sciences, humanities and professions. The organization as well as the financing of higher education is noticeably different from that of elementary and secondary education.

Canadian universities are English-language, French-language or bilingual. The French-language institutions are mostly church-related and have been patterned after those of some European countries. Until recently, they stressed the classics as preparation for the professions but they are changing and an increasing emphasis is being placed on pure and applied science. The older English-language universities stemmed from a variety of needs and desires on the part of the provincial governments, churches, and settlers from England, Scotland and elsewhere who also wished to establish institutions similar to those with which they were familiar.

In Eastern Canada, institutions of higher learning have tended to develop at different periods in response to these needs. The result is that a variety of small and middle-size degree-granting colleges and universities exist today. This is especially true in the Maritime Provinces. In Western Canada, on the other hand, the policy has been to establish one large provincial university with sole degree-granting powers within the province. Whether this policy of one degree-granting institution for the province will suffice in the face of the increasing demand for higher education is a matter of speculation. There is already some pressure in British Columbia for the establishment of a second university with degree-conferring powers. In Alberta and Saskatchewan, branch campuses of the provincial universities are in operation, and legislation for the establishment of junior colleges has been passed in British Columbia and Alberta.

The increasing enrolment, resulting partly from an increase in the university-age population and partly from the higher proportion of young persons seeking university training, has caused an unprecedented expansion of facilities as well as an extension of colleges into universities and the establishment of new institutions. Most of the universities have conducted financial campaigns for expansion at some time during the past ten years and indications are that many more such campaigns must be undertaken in the near future. Despite expansion and modernization, there are still some old and crowded buildings in use which contrast sharply with the new well-planned, roomy, permanent structures on spacious campuses. All Canadian universities are expanding, whether they are located in the cramped heart of a city, have begun again in suburban areas or were fortunate enough to have ample room on their first campus sites.

Federal Involvement in Education.—Although formal education at the elementary and secondary levels is the prerogative of the provinces, the Federal Government is responsible for the education of: Indians on reservations within the provinces; Indians, Eskimos and whites in the Yukon and Northwest Territories; families of members of the Armed Services in Canada and overseas; and inmates of the penitentiaries. Teachers in

these schools and institutions are members of the Civil Service. They teach under a school law and regulations similar to those in effect in the province concerned and the Federal Government utilizes provincial facilities whenever possible.

The Government of Canada contributes to the construction and maintenance of vocational training facilities, recognizing vocational training as an important factor in the economic development of the country. Such contributions affect practically every phase of publicly sponsored vocational training in Canada, although the degree of the contribution varies. A great impetus to such training has resulted from the passing of the Technical and Vocational Training Assistance Act (SC 1960-61, c. 6) which, among other things, provides for direct federal financial contribution of 75 p.c. of the total amount expended by a province on the building and equipping of vocational training facilities up to the fall of 1963.*

Higher education, to a far greater extent than elementary and secondary education, is free from government regulation or control, although the Federal Government through its Department of National Defence does operate three service colleges for the training of officers for Canada's Armed Services. The Federal Government contributes to higher education by means of direct grants to universities for current operating expenditures and capital projects through its agency, the Canada Council, and by providing scholarships and grants in aid of research to universities and individuals through such federal departments and agencies as the Canada Council, the National Research Council, the Defence Research Board, the Department of National Health and Welfare and the Department of Agriculture. In 1959-60 the Federal Government contributed 24 p.c. of the universities' current operating income (including research) and, over the four-year period 1956-59, about 8 p.c. of the universities' income for capital purposes.

Section 2.—Interesting Aspects of Education

New Techniques in Education.—Rapid growth in school enrolments, and difficulty in meeting staff requirements and in financing school construction and upkeep, has stimulated a searching inquiry into traditional methods of school administration and teaching. Research is being undertaken to determine whether new techniques may not effect economies in the operation of schools and at the same time speed up the learning process. In particular, standard classroom size and a rigid grade system of promotion are under close scrutiny. Experimental work continues in pupil streaming, in the elimination or grouping of certain grades with more opportunity for pupils to progress at their own speeds, in the building of schools with flexible classrooms, and in team teaching, which may involve such a hierarchy of staff as head teacher to co-ordinate the whole effort, subject specialists, junior or assistant teachers, and clerical or technical assistants to keep attendance and other records, set up laboratory equipment, operate projectors and generally look after the various forms of visual aid, etc.

This experimentation in new techniques is stimulated by new media for teaching, such as educational television, language laboratories, and teaching machines, which are just beginning to have a significant impact on education in Canada. Some schools have been experimenting with television for spot lessons in certain classes for several years, but the first province-wide application of television for instructional purposes in a public school system occurred in 1962 when Nova Scotia introduced a series of television lessons throughout the full school year in Grade 11 mathematics and science. Plans are to extend the program to include French in the school year 1963-64. About the same time two universities in Montreal introduced a number of television courses for credit, some in English and some in French. Television has the advantage of bringing expert instruction to a much wider range of students and to larger classes.

* The subject of vocational training is covered in detail in an article entitled "Recent Developments in Public Technical and Vocational Education in Canada" appearing in Chapter XVI on Labour (see Index).

The laboratory method of individual instruction in foreign languages, using electronic equipment, is used in a number of universities and in several of the larger secondary school systems. Its extension on a wider scale is limited in part by the relatively high initial cost of the equipment. The advent of programmed instruction, using programmed texts or "teaching machines", is one of the most recent innovations in teaching techniques. Programmed instruction lends itself to individual progress according to the pupil's ability and many informed observers believe that this method of instruction will relieve the teacher of some of the mechanical aspects of teaching and free him for much more constructive work.

Education Costs to Students.—In all provinces educational systems are based on the legal doctrine that schooling shall be free and compulsory during the child's formative years. With minor provincial differences, all children must attend school between the ages of six or seven and fifteen or sixteen. With few exceptions, no fees are charged for attendance at a public elementary or secondary school in the locality where the child resides. The cost of education at these levels is met mainly through taxation levied by the municipalities on property holders, and through provincial grants.

At the university level, however, students are charged an annual fee varying from \$200 to \$700 depending upon the institution and the faculty. The cost of text books and students' supplies must be added to tuition fees, so that total education costs, quite apart from living costs, impose a considerable financial burden on many students. Scholarships, fellowships and bursaries help to offset these costs for many students and the number of these is being increased annually.

A survey was made of university and college students enrolled in selected faculties for the academic year 1961-62, to analyse expenditures and sources of income. For single male undergraduates living at home, total expenditure during the college year ranged from \$1,060 to \$1,652, depending on the faculty; those who were not living at home spent between \$1,406 and \$2,231. Expenditures for single female undergraduates were slightly lower than those for males, and married undergraduates had expenditures ranging from \$2,758 for those in Education to \$3,929 for those in Dentistry. Male unmarried students at the graduate level had average expenditures of \$1,598 for those living at home and \$2,035 for those away from home, with the corresponding figures for females again slightly lower. Married male graduate students spent on the average \$3,968 during the college year.

National Organizations in Canadian Education.—A number of national organizations are active in the field of education.

The Canadian Education Association (CEA) is an organization through which the provincial Departments of Education can make known official education policy. It was founded in 1892 as the Dominion Educational Association, later became the Canadian Education Association, the Canada and Newfoundland Education Association, and in 1946 again became the Canadian Education Association. The present constitution provides for a majority representation of the executive from the provincial Departments, with membership open to many other educators. The CEA employs several full-time officials, including an Executive Secretary and a Research Officer. It issues a Newsletter monthly throughout the school year and publishes *Canadian Education and Research Digest*. Annual conventions are held in different cities each year.

The Canadian Teachers' Federation (CTF) was founded in 1919 as a federation of the provincial teachers' associations. It has a full-time staff and engages in many activities related not only to the welfare of teachers but to the betterment of education in general at the elementary and secondary levels. It undertakes research projects related to teaching methods and the learning process, and encourages and co-ordinates research projects initiated by the provincial associations. It publishes regular bulletins and separate articles dealing with various aspects of education.

The Canadian Universities Foundation (CUF), as the executive arm of the National Conference of Canadian Universities and Colleges, is a national organization which serves higher education in Canada in much the same way as the Canadian Education Association serves education at the elementary and secondary levels. With a growing full-time staff, which includes an Executive Director, a Director of Research and a librarian, it produces the bilingual quarterly bulletin *University Affairs*, as well as individual reports and series of reports dealing with higher education in this country. It administers Federal Government grants to universities and represents the universities generally in all dealings with government.

Other groups serving education at the national level are: the Canadian Association for Adult Education; the Canadian School Trustees' Association; the Canadian Association of School Superintendents and Inspectors; the Canadian Association of University Teachers; the Canadian College of Teachers; L'Association Canadienne des Édicateurs de Langue française; the Canadian Home and School and Parent-Teacher Federation; the Canadian Vocational Education Association; le Fédération des collèges classiques; the Canadian Council for Research in Education; the Social Science Research Council of Canada; and the Humanities Research Council of Canada. This list is not exhaustive but is indicative of the types of organizations whose primary concern is education. In addition, many other national organizations, such as the Boy Scouts Association and the Canadian Junior Red Cross may be said to have a peripheral interest in formal education.

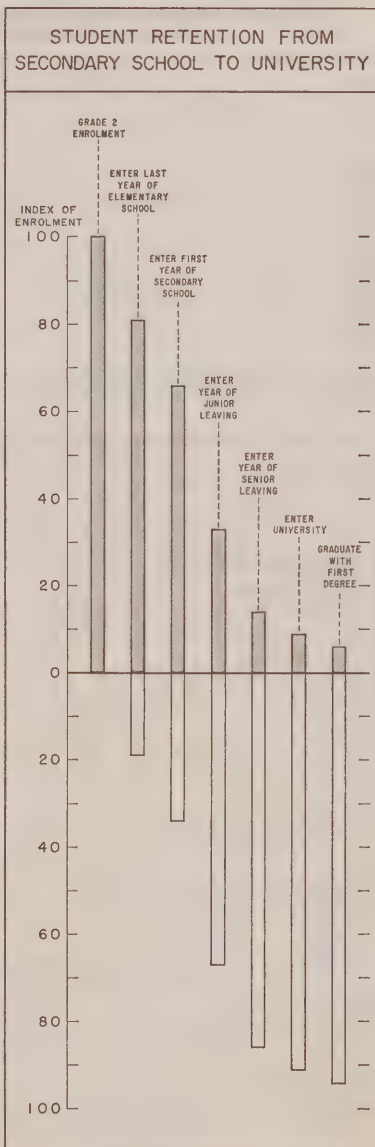
International Activities in Education.—Besides expanding its own educational resources, Canada is providing some assistance to under-developed countries which are attempting to expand their educational facilities. This takes two forms: welcoming scholars from abroad to Canadian universities (some 8,000 were enrolled in the academic year 1961-62); and making it possible for Canadian teachers and other educators to accept assignments in the newly emerging countries as advisers for periods ranging from a few months to one or more years.

Several organizations are facilitating this inflow of students from all over the world into Canadian universities, as well as the increasing outflow of Canadian educators who are serving in countries of Asia, Africa and the West Indies. At the Federal Government level, the operation and administration of Canada's external assistance programs is the responsibility of the External Aid Office (see p. 153). At the non-government level, the Canadian University Service Overseas (CUSO) promotes and co-ordinates opportunities for overseas service for Canadian university graduates. The National Committee for Friendly Relations with Overseas Students (FROS) is one of a number of groups set up to welcome to Canada students from other countries, to assist them in various ways during their stay in this country and to provide opportunities for mutual understanding and appreciation. Other such groups providing scholarships and other services for overseas students include the World University Service of Canada, the Overseas Institute of Canada, the African Students' Foundation, the Canadian Federation of University Women, the Canadian Friends' Service Committee, the Imperial Order of Daughters of the Empire, and several church organizations. Services, including hospitality, are provided by the local Kiwanis groups, the YMCA and YWCA, Pax Romano through its affiliates, the Student Christian Movement, the United Nations societies, the Canadian Council of Churches and the Co-operative Union of Canada. Other organizations, such as the Canadian Citizenship Council and the National Federation of Canadian University Students, assist the work of aiding overseas students in many ways.

Section 3.—Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be conveniently classified as publicly controlled, privately controlled, and federal. Municipal and provincial schools, most numerous by far, include elementary and high schools, vocational institutes, trade schools, teacher-training colleges, and schools for the blind and deaf, and provide as well for correspondence courses. Private schools may be academic, business or other vocational schools, or correspondence schools. Federal schools refer to schools for Indians, schools for residents of the Northwest Territories, and overseas schools for children of members of the Armed Forces or for Armed Forces personnel. Higher education is attained at universities and colleges, which may be provincial institutions, church institutions, independent, or federal military colleges. Continuing or adult education takes a variety of forms and reaches all levels from the basic English courses provided for newly arrived immigrants to courses leading to a university degree. Most organized classes for adults function under the auspices of universities, colleges, local school boards, churches and other community organizations.

Table 1 shows full-time enrolment at all levels each year for the period 1951-52 to 1962-63 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1961-62. In all types of schools the number of pupils has been increasing. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counter-balanced by the closing of many one-room rural schools.



1.—Full-time Enrolment in Elementary and Secondary Schools, and in Universities and Colleges, School Years 1951-52 to 1962-63

School Year	Elementary and Secondary Schools ¹			Universities and Colleges
	Elementary ² Grades	Secondary Grades	Total	
	No.	No.	No.	
1951-52.....	2,235,095	432,053	2,667,148	63,485
1952-53.....	2,354,686	454,892	2,809,578	63,041
1953-54.....	2,485,281	487,340	2,972,621	64,140
1954-55.....	2,604,543	539,281	3,143,824	68,320
1955-56.....	2,726,762	608,683	3,335,445	72,737
1956-57.....	2,842,501	653,938	3,496,439	78,504
1957-58.....	2,959,467	646,360	3,605,827	86,754
1958-59.....	3,084,346	748,098	3,832,444	94,994
1959-60.....	3,208,269	802,690	4,010,959	101,934
1960-61.....	3,319,450	832,247	4,201,697	113,864
1961-62.....	3,404,654	1,002,723	4,407,377	128,894
1962-63.....	3,480,485 ^p	1,097,714 ^p	4,578,199 ^p	141,388

¹ Includes publicly controlled, private, and Indian schools. ² From kindergarten to and including Grade 8 in all provinces except Quebec; Grade 8 included with secondary grades in Quebec.

2.—Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1961-62

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—						
Public and Separate—						
Schools.....	1,218	440	1,248	1,292	6,639	7,381
Teachers.....	4,502	1,013	6,951	6,039	49,736	50,912
Pupils.....	133,747	25,748	180,326	155,216	1,157,928	1,462,230
Overseas (DND)—						
Schools.....	...	...	...	...	...	...
Teachers.....	...	...	...	...	...	...
Pupils.....	...	...	...	...	...	...
Indian— ¹						
Schools.....	—	1	8	9	18	113
Teachers.....	—	2	34	24	100	287
Pupils.....	—	40	804	640	2,323	7,619
Blind—						
Schools.....	—	—	1	—	3	1
Teachers.....	—	—	21	—	42	30
Pupils (home province).....	33	2	69	36	267	190
Deaf—						
Schools.....	—	1	1	—	5	1
Teachers.....	—	1	32	—	113	77
Pupils (home province).....	66	12	116	92	886	562
Private—						
Schools.....	2	5	24	13	654	130
Teachers.....	24	33	282	163	6,324	1,713
Pupils.....	316	639	6,470	2,574	94,666	27,826
Higher Education—						
Institutions.....	3	2	16	10	212	65
Students (full-time university grade).....	1,757	683	6,409	4,533	43,156	35,871
Teacher-Training—						
Teachers' Colleges—						
Institutions.....	—	1	1	1	110	10
Teachers.....	—	2	26	31	1,425	248
Students.....	—	103	334	563	11,601	6,058

For footnote, see end of table, p. 338.

**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,
by Province, School Year 1961-62—continued**

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Teacher-Training—concluded						
Faculties of Education—						
Faculties ²	1	1	5	3	8	2
Teachers.....	13	2	13	7	246	48
Students ²	1,058	54	243	229	1,183	1,014
Vocational Education—						
Enrolment—						
Trade courses (pre-employment) (1960-61).....	836	152	1,446	1,018	8,132	3,604
Trade courses (apprentices) ²	797	—	814	1,443	4	3,295
Vocational high school courses... Post-secondary courses.....	503	140	905	4,528	21,429	70,751
Private business schools.....	—	—	32	78	5,712	3,959
Private trade schools.....	—	5	539	646	6,563	5,316
	—	—	107	—	4,943 ^a	4,005
Adult Education (part-time enrolment)—						
Universities (1960-61).....	544	342	7,892	9,069	37,152	64,574
Provincial governments (1960-61)	1,706	485	10,260	9,662	318,278	173,078
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—						
Public and Separate—						
Schools.....	1,740	2,175	1,198	1,305	72	24,708
Teachers.....	8,069	8,997	12,414	12,514	350	161,497
Pupils.....	194,854	215,625	307,702	341,219	7,633	4,188,228
Overseas (DND)—						
Schools.....	—	—	—	—	—	22
Teachers.....	—	—	—	—	—	378
Pupils.....	—	—	—	—	—	7,937
Indian—						
Schools.....	79	74	44	69	1	416
Teachers.....	207	204	211	229	5	1,303
Pupils.....	5,734	5,228	4,671	5,812	162	33,033
Blind—						
Schools.....	—	—	—	1	—	6
Teachers.....	—	—	—	10	—	103
Pupils (home province).....	18	26	21	83	2	737
Deaf—						
Schools.....	1	1	1	1	—	12
Teachers.....	7	22	22	21	—	295
Pupils (home province).....	109	166	120	182	9	2,260
Private—						
Schools.....	52	31	43	101	—	1,055
Teachers.....	504	294	340	933	—	10,610
Pupils.....	11,150	4,823	6,374	22,731	—	177,569
Higher Education—						
Institutions.....	10	17	11	8	—	354
Students (full-time university grade).....	6,947	6,329	8,499	14,710	—	128,894
Teacher-Training—						
Teachers' Colleges—						
Institutions.....	1	2	—	—	—	126
Teachers.....	22	42	—	—	—	1,796
Students.....	540	1,236	—	—	—	20,435
Faculties of Education—						
Faculties ²	2	2	2	2	—	28
Teachers.....	12	18	76	120	—	555
Students ²	226	1,051	2,637	3,027	—	10,722

For footnotes, see end of table, p. 338.

**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,
by Province, School Year 1961-62—concluded**

Item	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Vocational Education—						
Enrolment—						
Trade courses (pre-employment)						
(1960-61).....	2,550	2,894	2,821	2,527 ²	—	25,973
Trade courses (apprentices) ³	1,286	905	3,778	3,596	—	15,914
Vocational high school courses..	4,139	4,900	11,280	8,620	—	127,195
Post-secondary courses.....	—	168	1,032	197	—	11,178
Private business schools.....	1,014	807	1,403	2,324	—	18,612
Private trade schools.....	593	2,307	812	793	—	13,560
Adult Education (part-time enrolment)						
Universities (1960-61).....	8,281	12,063	25,664	26,255	—	191,836
Provincial governments (1960-61)	26,491	18,906	13,177	46,291	—	693,340 ⁴

¹ Day, residential and hospital schools administered by the Federal Government.
with "Higher Education".

² Also included

³ Includes indentured apprentices taking full-time, part-time and correspondence courses.

⁴ Included under "Trade courses(pre-employment)".

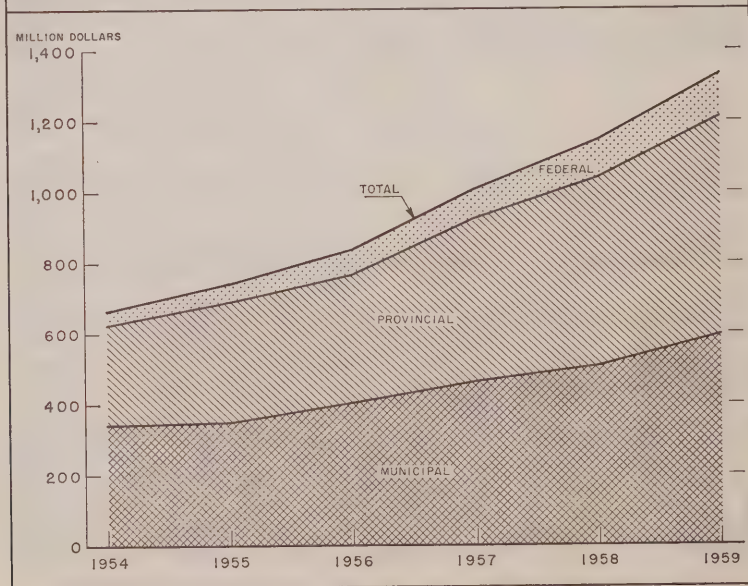
⁵ Included with Nova Scotia.

⁶ School year 1960-61.

⁷ Includes only students being trained under Federal-Provincial agreements.

⁸ Includes enrolment in courses sponsored by public libraries, business colleges, teacher-training institutions, and Federal Government departments not distributed by province.

**FEDERAL, PROVINCIAL AND MUNICIPAL EXPENDITURES
ON FORMAL EDUCATION, VOCATIONAL TRAINING AND
RELATED CULTURAL ACTIVITIES, 1954-59**



An attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditure on cultural activities related to education such as adult night classes, fine arts and handicraft courses, and libraries, museums and art galleries. Such expenditure for the year 1959 is presented in Table 3, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1957-59 are given at p. 343 and financial statistics for universities and colleges at pp. 347-348.

3.—Total Expenditure on Formal Education, Vocational Training and Related Cultural Activities, by Source of Funds, 1959

Type of Education	Local Taxation	Provincial Government ¹	Federal Government	Fees	Other Sources	Total Expenditure
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Formal Education—						
Elementary and Secondary—						
Public schools.....	581,928	459,553	14,862	5,216	9,430	1,070,989
Handicapped outside the public schools.....	545	7,249	...	...	307	8,101
Government correspondence schools.....	...	1,437	...	568	...	2,005
Reform schools.....	...	696	...	...	...	696
Indian and Eskimo education.....	...	...	32,791	...	...	32,791
Private schools.....	...	...	...	33,686	8,256	41,942
Totals, Elementary and Secondary.....	582,473	468,935	47,653	39,470	17,993	1,156,524
Teacher-training outside universities.....	...	10,520	20	582	15	11,137
Higher Education—						
Current operating expenditure.....	380	49,265	27,176 ²	40,789	14,872	132,482
Plant expenditure from current funds.....	51	36,575	6,960	...	...	43,586
Research in universities.....	...	827	12,367	...	5,135	18,329
Defence colleges.....	...	...	5,430	...	...	5,430
Scholarships.....	...	5,116	3,301	...	5	8,422
Other.....	...	104	354	...	...	458
Totals, Higher Education.....	431	91,887	55,588	40,789	20,012	208,707
Undistributable expenditure.....	...	...	276	...	...	276
Totals, Formal Education.....	582,904	571,342	103,537	80,841	38,020	1,376,644
Vocational Training—						
Institutes of technology.....	...	8,623	2,134	1,157	97	12,011
Apprenticeship.....	...	2,355	1,836	61	213	4,465
Trades training.....	...	7,209	1,345	724	17	9,295
Primary industries and homemaking.....	...	2,284	170	16	345	2,815
Unemployed.....	...	664	479	...	1	1,144
Handicapped.....	...	478	362	...	...	840
Health and welfare personnel.....	...	704	2,170	3	2	2,879
Inmates of reform institutions.....	...	386	268	...	...	654
Indians and Eskimos.....	...	...	241	...	...	241
Other vocational training costs.....	...	115	1,789	18	...	1,922
Provincial capital expenditures.....	...	9,990	...	...	...	9,990
Private business colleges.....	...	...	...	3,562	...	3,562
Totals, Vocational Training.....	...	32,898	10,794	5,541	675	49,818
Cultural Activities—⁴						
Adult education, including night schools.....	5	2,303	400	15	...	2,718
Fine arts.....	...	2,519	1,359	56	...	3,934
Handicrafts.....	...	236	...	...	2	238
Libraries ⁵	12,348	3,257	509	55	1,990	18,159
Archives, museums and art galleries.....	...	1,755	4,174	...	...	5,929
National Film Board productions.....	...	...	680	...	...	680
Cultural societies—grants.....	...	98	16	...	...	114
UNESCO—grant.....	...	...	339	...	...	339
Totals, Cultural Activities.....	12,348	10,168	7,477	126	1,992	32,111

¹ Includes the Yukon and Northwest Territories.

² Includes \$7,500,000 held in trust for Quebec universities.

³ Capital grants from the Federal Government are included in the appropriate classification above.

⁴ Limited to reported expenditures of public funds.

⁵ Included in "Elementary and Secondary—Public schools".

⁶ Includes capital costs from current funds.

Subsection 1.—Elementary and Secondary Schools

Control.—Direct control and operation of public schools is by school boards, which operate under school laws and regulations, and the members of which are elected or appointed usually for terms of two or three years. Through amalgamations and consolidations, schools are now operated by boards of larger units, local boards within larger units, independent boards for rural schools, towns or cities, and some by official trustees appointed by the province in lieu of a board. As their designations imply, private schools are administered by private organizations and federal schools by federal authorities.

Table 4 gives the number of active public school boards in each province in the school year ended in 1962 and indicates the type of board, the number of official trustees and the number of board members elected or appointed to these boards.

4.—Active School Boards and School Trustees, by Province, School Year 1961-62

Province or District	Boards of Larger Units	Local Boards within Larger Units	Independent Local Boards	Total Boards	School Boards Composed of Trustees who are—			School Trustees
					All Elected	Some Appointed Some Elected	All Appointed	
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	288	—	—	288	—	—	288	3,079
Prince Edward Island....	14	—	457	471	469	2	—	1,516
Nova Scotia.....	35	42	1,261	1,338	1,261	—	77	4,311
New Brunswick.....	14	409	82	505	475	16	14	2,474
Quebec—								
Roman Catholic.....	9	72	1,407	1,488	1,486	—	2	7,452
Protestant.....	9	64	147	220	218	1	1	934
Ontario.....	906	111	3,007	3,924	3,582	62	280	17,855
Manitoba.....	61	38	1,353	1,452	1,452	—	—	4,533
Saskatchewan.....	56	4,789	369	5,214	5,214	—	—	16,073
Alberta ²	59	—	143	202	202	—	—	889
British Columbia ²	83	—	17	100	87	13	—	565
Mackenzie District.....	—	—	3	3	3	—	—	11
Totals.....	1,534	5,425	8,246	15,205	14,449	94	662	59,692

¹ Boards of Education, members of Toronto Metropolitan Board.

² Ten school districts are under an official trustee or trustees.

³ In addition, five school districts are under an official trustee or trustees.

Enrolment.—Table 5 shows enrolment of all elementary and secondary pupils in Canada and in Department of National Defence schools overseas, and classifies them by grade. Private schools and schools for Indian and Eskimo children are included in these figures. Enrolment in private schools accounted for 4 p.c. of the total 1961-62 enrolment at the elementary and secondary levels. Schools operated by Federal Government departments, that is, schools for Indian children, schools in the Territories and overseas schools for children of Service personnel, accounted for about 1 p.c. of the total.

School enrolment has been increasing in recent years much more rapidly than the general population. Annual rates of increase in total school enrolment for the four most recent years ranged from 4.7 p.c. to 4.9 p.c., while the country's population during the same period increased annually by amounts varying from 1.8 p.c. to 2.2 p.c.

**5.—Enrolment in Publicly Controlled and Private Schools, by Grade,
School Year 1961-62**

Grade	New- foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Kindergarten.....	5,713	170	18,117	66	13,620	100,575
Grade 1.....	15,835	2,975	18,252	17,796	143,409	155,938
Grade 2.....	14,687	2,754	18,355	16,641	140,870	146,191
Grade 3.....	14,107	2,668	18,272	16,396	139,903	137,470
Grade 4.....	14,079	2,526	17,649	16,079	139,798	127,996
Grade 5.....	13,331	2,554	17,165	16,038	130,074	124,739
Grade 6.....	12,630	2,646	17,418	15,034	126,340	119,464
Grade 7.....	11,797	2,416	17,372	15,596	109,663	119,455
Grade 8.....	10,431	2,410	15,609	13,696	108,509	111,830
Grade 9.....	10,118	2,073	13,293	11,347	80,660	117,277
Grade 10.....	6,476	1,668	9,947	8,322	63,167	88,260
Grade 11.....	4,270	843	7,148	5,923	45,260	58,274
Grade 12.....	73	644	3,540	3,957	7,199	47,213
Grade 13.....	—	—	147	621	450	23,655
Auxiliary.....	11	16	855	604	5,679	13,219
Special.....	505	64	461	314	416	6,119
Totals.....	134,063	26,427	193,600	158,430	1,254,917	1,497,675

Grade	Manitoba	Saskat- chewan	Alberta	British Columbia	Yukon and N.W.T. ¹	DND Schools Overseas	Canada
	No.	No.	No.	No.	No.	No.	No.
Kindergarten.....	6,192	3,274	677	7,536	391	999	157,330
Grade 1.....	23,245	24,755	36,630	39,863	1,608	1,087	481,393
Grade 2.....	21,465	23,661	34,765	37,355	1,264	936	458,944
Grade 3.....	20,562	22,175	32,036	35,736	993	783	441,101
Grade 4.....	19,646	20,917	30,789	33,855	831	720	424,885
Grade 5.....	19,442	20,567	28,744	31,942	608	595	405,799
Grade 6.....	18,075	19,008	27,071	31,000	568	563	389,817
Grade 7.....	18,610	19,651	26,949	31,860	433	604	374,306
Grade 8.....	16,790	18,079	25,807	31,118	349	535	355,163
Grade 9.....	16,873	18,056	24,961	29,414	297	456	324,825
Grade 10.....	12,883	13,766	18,893	23,601	202	322	247,507
Grade 11.....	10,862	10,774	15,338	17,857	121	163	176,833
Grade 12.....	6,035	9,286	15,794	14,479	102	116	108,438
Grade 13.....	—	—	130	2,101	—	58	27,162
Auxiliary.....	997	1,210	68	1,964	28	—	24,651
Special.....	61	497	95	81	—	—	8,613
Totals.....	211,738	225,676	318,747	369,762	7,795²	7,937	4,406,767

¹ Includes Ungava District of Quebec.² Total for the Yukon 2,893 pupils.

Teaching Staffs.—Between the school years ended in 1942 and 1962 the number of teachers in the publicly controlled schools of the ten provinces increased 116 p.c. from 76,069 to 164,311. The number of men teachers increased 174 p.c. and the number of women 98 p.c.

In 1962, in the nine provinces outside of Quebec, 81.3 p.c. of the teachers had at least senior matriculation and one year of teacher-training, and an additional 10.6 p.c. had one year less schooling. Median experience in the eight provinces outside of Quebec and Ontario has slowly increased from 6.8 years in 1942 to 8.4 years in 1962, despite the large number of new teachers each year. Many of these have been recruited by the cities, where the median experience has declined from a high of 16.7 years in 1946 to 13.4 in 1954 and 9.6 years in 1962.

Between 1942 and 1962 the median salaries of all teachers in the nine provinces other than Quebec increased by 382 p.c. from \$915 to \$4,414, while that for teachers in one-room schools increased by 322 p.c. from \$739 to \$3,117. The annual rate of increase has naturally fluctuated considerably during that period, ranging from 1.8 p.c. in 1941 to 16.8 p.c. in 1948. The increase in 1962 over 1961 was 3.9 p.c. as compared with 4.7 p.c. for 1961 over 1960.

6.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1961-62

Province and Sex	Number	Median Salary	Median Experience	Fully Qualified ¹	University Graduates
TEACHING ELEMENTARY GRADES ²					
		\$	yrs.	p.c.	p.c.
Newfoundland.....M.	1,118	1,662	2.1	20.5	6.4
.....F.	2,536	2,348	3.5	13.0	2.9
Prince Edward Island.....M.	92	2,624	7.3	23.9	9.8
.....F.	744	2,527	7.6	11.4	1.2
Nova Scotia.....M.	483	3,322	5.2	79.5	35.6
.....F.	4,621	2,812	10.4	63.7	9.4
New Brunswick.....M.	468	2,792	3.0	42.7	21.6
.....F.	3,938	2,488	8.0	28.0	2.9
Quebec.....M.	..	..	..	..	..
.....F.	..	..	..	..	..
Ontario.....M.	9,150	4,577	5.8	93.0	27.7
.....F.	28,902	3,885	7.0	86.0	5.8
Manitoba.....M.	1,214	3,622	5.1	80.6	16.0
.....F.	4,171	3,579	7.4	80.8	5.6
Saskatchewan.....M.	1,592	4,113	6.0	97.2	11.2
.....F.	5,135	3,935	8.3	96.4	2.6
Alberta.....M.	1,451	5,118	7.8	91.2	37.0
.....F.	6,701	4,461	9.5	87.3	7.5
British Columbia.....M.	2,163	5,324	6.6	90.8	35.4
.....F.	5,431	4,784	7.5	88.0	11.0
TEACHING SECONDARY GRADES ³					
		\$	yrs.	p.c.	p.c.
Newfoundland.....M.	571	4,104	7.3	43.4	48.0
.....F.	277	3,782	11.2	31.0	32.9
Prince Edward Island.....M.	82	3,945	5.7	40.2	45.1
.....F.	95	3,213	12.7	25.3	24.2
Nova Scotia.....M.	933	4,742	8.9	78.8	66.2
.....F.	914	4,267	12.7	63.7	53.6
New Brunswick.....M.	869	4,637	6.7	51.7	47.4
.....F.	764	3,677	10.4	35.9	32.5
Quebec.....M.	..	..	..	..	..
.....F.	..	..	..	..	..
Ontario.....M.	8,583	7,316	7.8	74.3	94.0
.....F.	4,277	6,491	5.9	77.3	93.6
Manitoba.....M.	1,403	5,371	7.7	63.2	66.0
.....F.	878	4,997	9.8	59.7	59.8
Saskatchewan.....M.	1,534	6,406	12.5	63.4	80.7
.....F.	736	5,212	11.9	51.6	50.8
Alberta.....M.	2,635	6,802	10.9	64.4	69.5
.....F.	1,627	5,477	12.0	48.0	49.4
British Columbia.....M.	3,336	7,139	10.3	85.7	69.6
.....F.	1,584	6,266	11.2	70.8	62.9

¹ Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or senior matriculation and one or more years of professional training. At the secondary level they are teachers with junior matriculation and four or more years, or senior matriculation and three or more years of schooling, of which one year was professional training.

² Comprises teachers and principals instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary according to the provincial *Report of the Minister, 1961*.

³ Comprises teachers and principals instructing or supervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial *Report of the Minister, 1961*.

Financial Support.—Table 7 shows the sources of income of boards operating publicly controlled elementary and secondary schools for the years 1957-59. Their income is derived almost entirely from local taxation and provincial grants. Newfoundland is exceptional in that fees and income from other sources account for nearly 13 p.c. of the total income. Prior to 1961, fees were charged by Quebec school boards but school corporations are now required to provide elementary and secondary education free of

charge. Under the new legislation, parents who send their children to private schools are reimbursed for at least part of the fees charged. In other provinces, elementary and secondary education in the public school system is normally provided without direct charges on the parents.

Usually, school boards requisition the local municipalities for the sums needed to balance their budgets, taking into account provincial grants and other income. The municipal governments levy taxes on land and buildings and, in some cases, on improvements, personal property and business income. Several provinces have taken steps to equalize real property assessment.

Provincial grants accounted for nearly 40 p.c. of the total revenue of school boards in 1959, ranging from 30 p.c. in Quebec to 86 p.c. in Newfoundland.

Only four provinces collect figures for debenture indebtedness although it is the usual practice in all provinces, except Newfoundland, for boards to finance construction of new schools, at least in part, by issuing debentures. Provincial governments help boards to meet capital expenditures by grants of a percentage of the cost of new buildings, by grants of a fixed amount per room built, or by paying grants based on debenture debt charges. Some provinces guarantee debentures issued by the boards and others assist in marketing them.

7.—Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Years Ended Mar. 31, 1957-59

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation. Figures from 1914 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Province and Year	Income from—			Total Current Revenue Recorded	Debenture Indebtedness ¹
	Provincial Government Grants	Local Taxation	Other Sources		
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1957	8,935	30	2,382	11,347	..
.....1958	11,533	163	1,682	13,378	..
.....1959	12,861	205	1,838	14,904	..
Prince Edward Island.....1957	1,174	1,000	56	2,230	..
.....1958	1,220	1,178	101	2,499	..
.....1959	1,565	1,273	60	2,898	..
Nova Scotia.....1957	12,300	13,216	420	25,936	..
.....1958	12,567	14,329	372	27,268	..
.....1959	14,038	16,878	457	31,373	..
New Brunswick.....1957	7,712	13,453	308	21,473	..
.....1958	6,829	14,797	612	22,238	..
.....1959	8,508	16,211	832	25,551	..
Quebec.....1957	48,659	106,655	5,366	160,680	236,492
.....1958	56,042	122,191	6,176	184,409	264,789
.....1959	63,936	144,046	6,864	214,846	289,782
Ontario.....1957	98,182	188,722	9,944	296,848	..
.....1958	129,552	197,656	12,412	339,620	..
.....1959	150,157	240,149	11,843	402,149	..
Manitoba.....1957	10,093	23,472	566	34,131	23,529
.....1958	13,190	24,400	639	38,229	27,145
.....1959	20,244	27,935	142	48,321	34,849
Saskatchewan.....1957	18,637	32,270	864	51,771	23,855
.....1958	20,679	34,613	991	56,183	27,693
.....1959	25,443	35,111	1,506	62,060	37,170
Alberta.....1957	40,594	35,678	1,989	78,261	84,064
.....1958	48,810	41,092	1,887	91,789	95,580
.....1959	50,830	46,671	1,727	99,228	107,716
British Columbia.....1957	39,446	36,766	1,699	77,911	..
.....1958	43,217	45,128	1,935	90,280	..
.....1959	48,576	53,226	1,925	103,727	..

¹ Net figures, after deduction of sinking funds.

Subsection 2.—Universities and Colleges

Institutions.—According to the latest information available (1960-61) at the time of going to press, there were in Canada 354 institutions of higher education offering one or more years of degree-credit courses—304 under the control of religious bodies (264 Roman Catholic), 23 under provincial government control, three under Federal Government control, and 24 under private non-denominational control. These institutions were distributed, by province, as follows:—

Province	Active Degree- Granting Institutions	Other Institutions	Total
	No.	No.	No.
Newfoundland.....	1	2	3
Prince Edward Island.....	1	1	2
Nova Scotia.....	9	7	16
New Brunswick.....	6	4	10
Quebec.....	8	204	212
Ontario.....	21	44	65
Manitoba.....	3	7	10
Saskatchewan.....	5	12	17
Alberta.....	2	9	11
British Columbia.....	3	5	8
TOTALS.....	59	295	354

Enrolment.—Full-time university-grade enrolment continues to increase year by year and indications are that enrolments may well be double the 1962-63 figure of 141,388 in about ten years. Table 8 shows full-time enrolment by province for the academic years ended 1960-63. In the latest year, in addition to full-time students, there were 44,048 part-time university-grade students (including 5,351 graduate students) in attendance during the regular 1962-63 winter session and 7,522 students taking university-grade correspondence courses.

8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1960-63

NOTE.—Figures to 1960-61 are for enrolment at Dec. 1 of the academic year indicated and comprise actual graduate enrolment reported and estimated figures for total enrolment based on data available from institutions representing about 98 p.c. of the total enrolment.

Province	1959-60		1960-61		1961-62		1962-63	
	Total	Graduate Only ¹	Total	Graduate Only ¹	Total	Graduate Only ¹	Total	Graduate Only
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	1,070	21	1,240	33	1,757	17	1,998	34
Prince Edward Island.....	530	—	670	—	683	—	705	—
Nova Scotia.....	5,300	130	5,820	147	6,409	172	7,034	242
New Brunswick.....	3,700	87	4,070	90	4,533	149	4,896	181
Quebec.....	33,700	1,599	38,000	1,981	43,156	2,307	47,324	2,813
Ontario.....	29,400	2,211	32,100	2,599	35,871	2,903	39,269	3,328
Manitoba.....	5,850	204	6,360	251	6,947	294	7,741	296
Saskatchewan.....	4,860	168	5,630	210	6,320	226	7,024	253
Alberta.....	6,100	294	7,140	350	8,499	471	9,837	656
British Columbia.....	11,490	520	13,070	857	14,710	808	15,560	633
Totals.....	102,000	5,234	114,000	6,518	128,894	7,347	141,388	8,436

¹ All theology enrolment included as undergraduate prior to 1962-63.

Foreign enrolment has risen considerably since the end of World War II, with a larger proportion of students from countries other than the United States and Britain coming to Canadian institutions, as shown in Table 9. In 1961-62 about one of every 16 full-time university students in Canada was a resident of a country other than Canada. Hong Kong, Trinidad and Tobago, and Britain each accounted for over 500 students while France, Pakistan, India and Jamaica contributed from 100 to 400 each. Over 100 other countries or territories were represented in the figures.

9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and Britain, Selected Academic Years Ended 1931-62

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—					Total Enrolment from Other Countries in Canada ¹	Canadians Studying in—	
		United States	Britain	British West Indies	Newfoundland ¹	Other Countries		United States ²	Britain ³
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1931.....	32,926	1,506	333	54	175	236	2,304	1,313	212
1941.....	36,319	1,478	41	74	174	289	2,056	1,458	..
1951.....	68,306	1,758	164	252	...	1,014	3,188	4,528	372
1956.....	72,729	1,773	281	635	...	1,696	4,385	4,990	404
1959.....	94,400	1,984	526	1,018	...	2,460	5,988	5,432	438
1960.....	102,000	2,022	576	1,050	...	2,778	6,426	5,679	458
1961.....	114,000	2,329	640	1,150	...	3,120	7,239	6,068	502
1962.....	128,894	2,660	577	1,251	...	3,412	7,900 ⁴	6,571	559

¹ Before 1949 Newfoundland was considered as being a country outside Canada. ² Data from the Institute of International Education, New York. ³ Data from the Association of Universities of the British Commonwealth, London, England. ⁴ Newfoundland is included with Canada for all years. ⁵ Includes 3,294 from all British Commonwealth countries and territories.

Graduates.—Table 10 gives figures for graduates in most faculties for the academic years ended 1960-63; breakdown by sex was not available for 1962-63 at the time of going to press.

10.—Graduates from Universities and Colleges, Academic Years Ended 1960-63

NOTE.—Figures for 1920-36 are given in the 1933 Year Book, pp. 993-997, and for 1937-59 in the corresponding table of subsequent editions.

Field of Study	1959-60 [*]		1960-61 [*]		1961-62		1962-63
	Total	Female	Total	Female	Total	Female	Total ¹
	No.	No.	No.	No.	No.	No.	No.
Graduates in Arts, Pure Science and Commerce.	9,506	2,628	10,335	2,896	12,207	3,516	11,150
Bachelors of Arts ²	7,171	2,336	7,614	2,549	9,226	3,154	13,000
Bachelors of Science (in Arts) ³	1,311	247	1,614	287	1,879	310	
Bachelors of Commerce ⁴	1,024	45	1,110	60	1,102	52	1,150
Graduates in Applied Science.	2,409	14	2,614	8	2,692	7	2,455
Bachelors of Applied Science in Engineering.....	2,171	7	2,412	8	2,462	4	2,250
Bachelors of Architecture ⁵	98	7	84	—	114	3	110
Bachelors of Forestry.....	139	—	115	—	110	—	90
Bachelors of Fisheries.....	1	—	3	—	6	—	5
Graduates in Agriculture, Veterinary Science and Household Science.	559	251	637	286	710	299	790
Bachelors of Agricultural Science.....	248	7	311	12	351	9	380
First degrees in Veterinary Science.....	68	1	56	4	72	3	70
Bachelors of Household Science.....	243	243	270	270	287	287	340

For footnotes, see end of table, p. 346.

10.—Graduates from Universities and Colleges, Academic Years Ended 1960-63—concluded

Field of Study	1959-60*		1960-61*		1961-62		1962-63
	Total	Female	Total	Female	Total	Female	Total ¹
	No.	No.	No.	No.	No.	No.	No.
Graduates in Education, Library Science and Social Service	2,596	1,158	3,124	1,217	3,835	1,599	4,170
First degrees in education or pedagogy.....	2,102	862	2,430	903	3,009	1,158	3,300
Librarian degrees and diplomas.....	106	88	199	130	268	189	230
Physical education first degrees and diplomas.....	143	60	245	69	321	90	390
Social service degrees and diplomas.....	245	148	250	115	237	162	250
Graduates in Medicine and Related Studies	1,793	490	1,778	582	1,948	713	2,015
Medical doctors.....	879	66	842	65	846	86	820
Dentists.....	219	8	179	8	229	8	250
Pharmacists.....	263	57	281	86	281	78	310
First degrees in nursing.....	238	238	302	302	384	383	350
Physiotherapy and occupational therapy.....	119	119	118	118	147	147	230
Chiropractic.....	54	1	28	2	19	1	20
Optometry.....	21	1	23	1	42	10	35
Graduates in Law and Theology	1,699	84	1,556	85	1,516	87	1,500
First degrees and equivalent diplomas in law.....	840	33	697	35	666	37	650
Roman Catholic theological colleges.....	564	—	562	—	550	—	550
Protestant theological colleges ²	295	51	297	50	300	50	300
Other First Degrees and Equivalent Diplomas	183	144	195	137	209	145	315
Bachelors of Fine and Applied Arts.....	16	10	11	8	13	9	20
Bachelors of Interior Design.....	9	9	9	8	10	8	15
Journalism.....	26	19	25	14	26	14	35
Bachelors of Music.....	92	76	88	67	80	57	150
Others.....	40	30	65	40	80	57	95
Graduate and Honorary Degrees	2,622	417	3,045	519	..	..	..
Honorary doctorates.....	237	10	265	14	..	..	..
Doctorates in course.....	281	22	305	26	321	26	350
Masters of Arts ³	1,217	260	1,431	304	2,768	503	3,150
Masters of Science ⁴	583	42	677	49			
Licences (except in Theology) ⁵	304	83	367	126			

* Estimated. ² Includes Bachelors of Letters and Social Science. ³ Some institutions include Science degrees in Arts. ⁴ Includes Bachelors of Accounting and Secretarial Science. ⁵ Includes diplomas in Architecture from the School of Architecture of Montreal. ⁶ Includes all diplomas and degrees except for Bachelors of Divinity. ⁷ Includes M. Com., M. Ed., M. Paed., M. S. W., as well as M. A. In some institutions, M. Sc. degrees are included with M. A.'s. ⁸ Includes M. A. Sc., M. S. A., M. Sc. F., M. Arch., M. V. Sc., M. Sc. Dent., M. Surgery (where conferred separately) as well as M. Sc. ⁹ The "Licence" in the French language universities is the next degree in advance of the Bachelor.

Teaching Staffs.—Table 11 shows the trend in university teaching staffs since 1954.

11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1954-63

NOTE.—Figures from 1957 are estimates based on returns from institutions representing about 50 p.c. of the total enrolment. Figures for all years include some research personnel and junior and sessional lecturers and assistants.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1954.....	6,503	1959.....	8,200
1955.....	6,474	1960.....	9,200*
1956.....	6,719	1961.....	9,755*
1957.....	7,000	1962.....	10,540*
1958.....	7,500	1963.....	11,670

Table 12 gives median salaries, by rank and region, for the staffs of 17 major institutions for 1962-63.

12.—Median Salaries of Teachers at 17 Universities, Academic Year 1962-63

NOTE.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta, British Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

Rank	Region				Staff Com- plement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	\$	\$	\$	\$	No.
Deans.....	13,071	17,607	15,800	16,031	107
Professors.....	10,179	13,236	13,017	12,972	1,087
Associate professors.....	8,197	9,849	10,092	9,858	1,275
Assistant professors.....	6,781	7,865	7,845	7,778	1,601
Instructors and lecturers.....	5,512	6,242	6,336	6,226	927
Totals, All Ranks.....	7,250	9,150	8,989	8,894	5,016¹

¹ Includes 19 ungraded professors not distributed above.

Finances.—Table 13 gives a historical series of the finances of Canadian universities. Since 1952 they have received more than one half of their revenue from government grants and a very small amount from municipal councils. Beginning with the academic year 1951-52, the Federal Government has provided university grants to help meet current operating costs. These grants were originally paid on the basis of 50 cents per head of population in each province and the eligible institutions received their share of the provincial allotment according to the number of full-time students in undergraduate and graduate courses. The rate of grant was increased to \$1.00 per capita in 1956-57, to \$1.50 in 1958-59 and to \$2.00 in 1962-63. The Province of Quebec did not accept this grant for the years up to 1955-56. From 1956-57 to 1959-60 the payments refused by Quebec were held in trust by the Canadian Universities Foundation, which administers the fund. In 1960-61 the Quebec Government and the Federal Government negotiated a new tax-sharing agreement under which Quebec provides its own grants and is reimbursed by an abatement of corporation tax. Table 14 gives details of the federal grants for each of the academic years from 1960-61 to 1962-63. The figures for 1961-62 include an adjustment made to the 1960-61 grants resulting from a revision of the 1960 population estimates made when actual census figures for 1961 became available.

The Federal Government also provides assistance to universities through the University Capital Grants Fund which is administered by the Canada Council. The original amount in the fund was \$50,000,000, to be granted in amounts not exceeding 50 p.c. of specific building or capital equipment projects, having regard to the population of each province. In the first year of its operation (ended Mar. 31, 1958), grants amounting to \$4,100,000 were authorized and \$1,300,000 was actually paid. Up to the end of March 1963, a total of over \$30,000,000 had been paid. Grants are paid in four equal instalments spread over the period of construction so that there is a time lag between approval and payment.

The Canada Council was also endowed with an additional \$50,000,000 for the provision of scholarships or other assistance in the fields of the arts, humanities and social sciences (see also pp. 357-359).

13.—Current Income and Expenditure of Universities and Colleges, Academic Years 1950-51 to 1959-60

NOTE.—Up to 1953, institutions included represent about 80 p.c. of the total full-time university-grade enrolment. For the years 1954-58 figures given are an estimate of the total current revenue and expenditure of universities and colleges.

Academic Year	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees ¹	Miscel- laneous	Total ¹	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1950-51.....	2,950	16,959	15,409	5,140	40,458	40,697
1951-52.....	3,127	18,733	14,025	4,647	40,532	40,792
1952-53.....	3,185	25,284	14,544	5,208	48,221	47,195
1953-54.....	2,979	26,554	14,280	6,675	50,468	50,116
1954-55.....	3,651	41,786	21,285	9,037	75,759	76,057
1955-56.....	4,692	45,107	21,600	8,938	80,337	80,427
1956-57.....	5,014	49,911	25,105	10,733	90,763	86,521
1957-58.....	4,375	57,118	30,867	10,304	102,664	102,991
1958-59 [*]	4,668	70,843	33,546	11,373	120,430	121,113
1959-60.....	5,082	82,515	40,789	14,132	142,518	143,311

¹ Board and lodging not included.

14.—Federal Government University Grants, by Province, Academic Years Ended 1961-63

NOTE.—Figures for 1952-60 are given in the corresponding table of previous Year Books beginning with the 1955 edition.

Province and Academic Year Ended—	Institutions	Eligible Enrolment	Total Grants	Grant per Eligible Student
	No.	No.	\$	\$
Newfoundland.....	1961 1	1,238	688,500	556.14
	1962 1	1,757	672,225	390.88
	1963 1	1,998	940,000	470.47
Prince Edward Island.....	1961 2	563	154,500	274.42
	1962 2	683	157,784	229.79
	1963 2	705	212,000	300.71
Nova Scotia.....	1961 13	5,802	1,084,500	186.92
	1962 13	6,372	1,113,834	173.50
	1963 13	6,943	1,492,000	214.89
New Brunswick.....	1961 6	4,059	900,000	221.73
	1962 6	4,532	880,812	197.90
	1963 6	4,892	1,214,000	248.16
Quebec ¹	1961 ...	...	...	...
	1962 ...	...	...	...
	1963 ...	...	...	...
Ontario.....	1961 31	28,664	9,133,500	318.64
	1962 31	31,999	9,325,428	292.33
	1963 30	35,185	12,684,000	360.49
Manitoba.....	1961 8	6,233	1,348,500	216.35
	1962 8	6,853	1,395,065	201.74
	1963 8	7,583	1,870,000	246.60
Saskatchewan.....	1961 13	5,474	1,365,000	249.41
	1962 13	6,182	1,397,189	224.49
	1963 14	6,907	1,860,000	269.29
Alberta.....	1961 6	6,810	1,924,500	282.60
	1962 6	8,080	2,008,685	247.27
	1963 6	9,379	2,740,000	292.14
British Columbia.....	1961 5	12,861	2,409,000	187.31
	1962 5	14,418	2,409,060	169.48
	1963 5	15,159	3,318,000	218.88
Totals ¹	1961 85	71,704	19,008,000	265.09
	1962 85	80,876	19,360,082	240.02
	1963 85	88,751	26,330,000	297.00

¹ See text on p. 347 re Quebec.

Subsection 3.—Vocational Education*

Canadian vocational courses and training below university level are organized either in formal classes and training shops or in the form of informal on-the-job training. However, very often the two methods complement each other so that, for instance, an apprentice having a contract with and working for a private firm may attend a provincial trade school on a part-time or full-time basis.

Most formal vocational education is sponsored by public bodies, either by local school boards at their high schools or directly by provincial governments in trade schools and technical institutes. Private vocational schools supplement the publicly supported training facilities to quite an extent and some industrial firms train their own skilled manpower.

Table 15 summarizes the data on full-time training classes. The duration of these classes may vary from three weeks taken annually by indentured apprentices at provincially operated trade schools, to two-year vocational high school courses or three-year post-secondary courses offered in provincial technical institutes. Numerous skills are taught, ranging from short courses in welding or typing to extended courses for instrument technicians or aircraft maintenance men. Students taking two-year or three-year vocational courses in public secondary schools may, upon completion, enter employment or may continue other formal training in a trade school or a technical institute.

In addition to the full-time vocational courses, a great variety of part-time instruction is offered by both public and private institutions as an alternative to full-time training or as an attraction to the individual interested in a hobby.

* This subject is covered in detail in a special article entitled "Recent Developments in Public Technical and Vocational Education in Canada" appearing in Chapter XVI on Labour (see Index).

15.—Full-Time Enrolment in Vocational Courses, School Year 1960-61

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Trade courses.....	836	152	1,447	1,016	8,132 ¹	3,604
Vocational high school courses....	434	130	861	4,706	17,069	61,049
Post-secondary technical courses..	—	—	30	61	7,086	3,083
Apprenticeship courses.....	234	—	267	98	1,497	2,780
Privately Sponsored—						
Trade school courses.....	—	—	122	—	4,943	1,331
Business school courses.....	—	575	—	611	6,563	5,645
Totals.....	1,504	3,584		6,492	45,290	77,492
	Man.	Sask.	Alta.	B.C.	Not Specified	Canada
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Trade courses.....	2,550	2,894	2,821	2,522 ²	—	25,974 ³
Vocational high school courses....	3,457	4,543	10,990	8,020	—	111,259
Post-secondary technical courses..	—	105	911	146	—	11,422
Apprenticeship courses.....	874	1,049	3,697	499	—	10,995 ⁴
Privately Sponsored—						
Trade school courses.....	476	1,798	786	693	1,505	11,654 ⁵
Business school courses.....	826	883	1,651	2,359	—	19,013 ⁵
Totals.....	8,183	11,272	20,756	14,239	1,505	190,317

¹ Excludes training of the unemployed.² Excludes some 2,000 fee-paying students.³ Excludes

training of the unemployed in Quebec and some 2,000 fee-paying students in British Columbia.

⁴ In addition, there were 9,679 part-time students and 390 students taking correspondence courses.⁵ Excludes 10,169 part-time students and 37,679 students taking correspondence courses from private trade schools and business schools.⁶ Excludes some 18,000 part-time students.

Subsection 4.—Adult Education

Adult education in Canada, under university, government and private auspices, offers a variety of opportunities to persons who are not attending school full-time to raise their academic qualifications, secure vocational training, and engage in other social and cultural learning experiences. Annual surveys from 1957 to 1961 show steady increases in adult education enrolment, from a total of 522,207 in 1957-58 to 908,812 in 1960-61, under university, government and business college sponsorship. Attendance at public lectures, film showings, exhibits, lectures, tours, etc., under similar auspices more than doubled during the same period. In addition, private academic, trade and technical schools, employers, churches, and other voluntary organizations and agencies, not included in annual surveys, sponsor many less-formal courses in the field of adult education.

In 1960-61, universities and colleges sponsored more than one quarter of the enrolment reported in the annual survey, and government departments and agencies were responsible for more than two thirds. Academic subjects for credit toward a high school diploma or university degree represented 18.6 p.c. of the total enrolment and vocational, industrial, commercial, agricultural, home economics and applied arts courses, and professional training and refresher courses in medicine, science and executive development for 31.8 p.c.; the remainder were in informal, non-credit courses in social education and cultural subjects, such as family life education, citizenship and public affairs, health education, fine arts, religion, philosophy and languages.

In a survey of participants in adult education under all auspices conducted in June 1960, it was found that, in general, persons taking adult education courses were younger than the average adult and better educated. More men than women reported taking courses and vocational courses were the most popular.

In addition to these programs, the institutions and agencies surveyed offered a variety of adult education services. Radio and television programs were produced, printed information materials were published, and exhibits, fairs, conferences and workshops were organized. Advisory services were also made available to groups and individuals. The National Film Board and the Canadian Broadcasting Corporation played an important role in adult education through the production of cultural and informational programs for use by groups and individuals.

16.—Adult Education Activities, School Year 1960-61, with Totals for 1959-60

Province and Sponsor	Part-Time Enrolment in—			Total Enrolment	Attendance at Public Lectures, etc.
	Academic Subjects	Vocational and Professional Training	Informal Courses		
	No.	No.	No.	No.	No.
Newfoundland—					
Universities.....	110	74	360	544	1,130
Government ¹	1,278	320	108	1,706	32,136
Prince Edward Island—					
Universities.....	312	30	—	342	—
Government ¹	—	485	—	485	—
Nova Scotia—					
Universities.....	2,535	4,697	660	7,892	84,267
Government ¹	1,236	5,491	3,533	10,260	17,000
New Brunswick—					
Universities.....	5,838	322	2,909	9,069	10,350
Government ¹	1,500	5,679	2,483	9,662	39,392
Quebec—					
Universities.....	18,625	10,575	7,952	37,152	151,060
Government ¹	22,528	78,426	236,426	337,380	178,150

¹ Operated and assisted by federal and provincial departments and agencies.

16.—Adult Education Activities, School Year 1960-61, with Totals for 1959-60—concluded

Province and Sponsor	Part-Time Enrolment in—			Total Enrolment	Attendance at Public Lectures, etc.
	Academic Subjects	Vocational and Professional Training	Informal Courses		
	No.	No.	No.	No.	No.
Ontario—					
Universities.....	25,632	14,593	24,349	64,574	301,222
Government ¹	34,841	66,095	72,142	173,078	16,910
Manitoba—					
Universities.....	4,447	2,654	1,180	8,281	56,257
Government ¹	3,283	3,063	20,145	26,491	305,381
Saskatchewan—					
Universities.....	3,999	4,393	3,671	12,063	75,953
Government ¹	6,788	4,430	7,676	18,894	273,406
Alberta—					
Universities.....	6,282	7,077	12,305	25,664	604,387
Government ¹	5,308	2,969	4,900	13,177	—
British Columbia—					
Universities.....	5,110	6,003	15,142	26,255	272,940
Government ¹	8,039	17,364	20,888	46,291	202,300
Federal Government.....	11,464	3,759	9,252	24,475	903,610
Public libraries.....	—	—	4,470	4,470	188,054
Business colleges.....	—	25,607	—	25,607	—
Teacher-training institutions.....	—	25,000 ²	—	25,000 ²	—
Totals, 1960-61.....	169,155	289,106	450,551	903,812	3,713,905
Totals, 1959-60.....	155,729	278,704	229,613	664,046	2,698,034

¹ Operated and assisted by federal and provincial departments and agencies.² Estimate.

PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

Section 1.—Art and Education

Fine Art Schools, Galleries and Organizations.—Fine art appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. In Mount Allison University, N.B., and in the Universities of Saskatchewan and Manitoba, there is a sufficient number of courses to allow the taking of a Bachelor degree with specialization in fine art. At the University of Toronto an Honour B.A. in art history and archaeology is offered, as well as graduate work in this field. Departments of fine art were opened by McGill University in 1948-49, by the University of British Columbia in 1949-50 and by the University of Alberta in 1953-54; McMaster University reopened its department in 1951.

There are also schools of art not requiring any fixed academic standing for admission, as they are more concerned with the technical development of the artist. The most widely known of these are:—

Nova Scotia College of Art, Halifax, N.S.

École des Beaux-Arts, Quebec, Que.

École des Beaux-Arts, Montreal, Que.

School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.

Ontario College of Art, Toronto, Ont.

University of Manitoba School of Art, Winnipeg, Man.

School of Art, Regina College, Regina, Sask.

Provincial Institute of Technology and Art, Banff School of Fine Arts, Banff, Alta.

(affiliated with the University of Alberta, Edmonton)

Vancouver School of Art, Vancouver, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. Summer schools of art are sponsored by some of the foregoing institutions, by universities, and by various independent groups.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and often concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions, and organizations such as the Maritime Art Association, the Western Canada Art Circuit, the Art Institute of Ontario and the Queen's Art Circuit have been founded to carry on the work on a regional basis. The National Gallery of Canada has a nation-wide program of this nature. It is the third largest circulating agency in North America. The principal art galleries are:—

Beaverbrook Art Gallery, Fredericton, N.B.
 Montreal Museum of Fine Arts, Montreal, Que.
 National Gallery of Canada, Ottawa, Ont.
 Public Library and Art Museum, London, Ont.
 Art Gallery of Toronto, Toronto, Ont.
 Art Gallery of Hamilton, Hamilton, Ont.
 Winnipeg Art Gallery, Winnipeg, Man.
 Norman Mackenzie Art Gallery, Regina, Sask.
 Edmonton Art Gallery, Edmonton, Alta.
 Calgary Allied Arts Centre, Calgary, Alta.
 Vancouver Art Gallery, Vancouver, B.C.
 Art Gallery of Greater Victoria, Victoria, B.C.

Other Art Organizations.—The leading art organizations of national scope, exclusive of museums and art galleries, include the following:—

Association of Canadian Industrial Designers
 Canadian Arts Council
 Canadian Group of Painters
 Canadian Guild of Potters
 Canadian Handicrafts Guild
 Canadian Museums Association
 Canadian Society of Graphic Art
 Canadian Society of Painter-Etchers and Engravers
 Canadian Society of Painters in Water Colour
 Canadian Society of Landscape Architects and Townplanners
 Community Planning Association of Canada
 Federation of Canadian Artists
 Royal Canadian Academy of Arts
 Royal Architectural Institute of Canada
 Sculptors Society of Canada.

The National Gallery of Canada.—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. The group of pictures that formed the nucleus of the collection was selected by the Marquis. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three laymen was appointed by the government to administer grants to the National Gallery. Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament (RSC 1952, c. 186) and was placed under the administration of a Board of Trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under such management, the Gallery increased its collections and developed into an art institution worthy of international recognition. Today, the Gallery administration comes under the aegis of the Minister of Citizenship and Immigration. The Board of Trustees, now composed of nine members representing all sections of Canada, meets twice annually.

In 1960, the Gallery entered a new era in its history when the entire national collection and the staff and equipment necessary to its maintenance were transferred to new modern quarters—the Lorne Building in downtown Ottawa—and, for the first time, the Gallery had adequate well-lighted space for hanging its permanent works of art and for displaying travelling exhibitions.

The Gallery's collections are of indisputable taste and quality. They have been built up along international lines and give the people of Canada an indication of the origins from which their national tradition is developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented by the purchase of works from the Biennials of Canadian Art and other sources. The collections of Old Masters include twelve important works acquired from the Liechtenstein collection; extensive war collections; the Massey collection presented to the Gallery during 1946-50 by the Massey Foundation; a collection of French paintings; prints and drawings; and diploma works of the Royal Canadian Academy. The prints and drawings collection, established in 1921 and the first to be organized in a Canadian art gallery, now consists of more than five thousand items.

The services of the Gallery include the operation of a reference library open to the public which contains more than 10,000 volumes and periodicals on the history of art and other related subjects; the operation of an Exhibition Extension Service which prepares and circulates travelling exhibitions, provides educational services such as lectures offered to the general public across Canada, and organizes guided tours for visitors to the Gallery at Ottawa; the production of publications, films, reproductions, didactic exhibitions and other aids to art appreciation; and assistance to Canadian artists participating in important international exhibitions such as the Biennials held in Paris, Venice and São Paulo. The Conservation and Scientific Research Division of the Gallery handles requests for technical information, investigations and restoration of paintings and other specialized problems concerning the handling of precious works of art. It is intended that the research laboratories will become the national centre for scientific research in the conservation of works of art.

Section 2.—Museums and Education

Modern museums, in Canada and elsewhere, are breaking away from the old concept of repositories and are assuming an important role as educational and cultural centres. They have an advantage over other agencies of education in that they are able to show actual, original objects rather than merely offering descriptions or pictures of such objects. Canadian museums of history and science offer many educational services to the public in addition to providing exhibits that are both interesting and informative. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services:—

Nova Scotia Museum, Halifax, N.S.
McGill University Museum, Montreal, Que.
National Museum of Canada, Ottawa, Ont.
Royal Ontario Museum, Toronto, Ont.
Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are:—

The New Brunswick Museum, Saint John, N.B.
Museum of the Province of Quebec, Quebec, Que.
The Manitoba Museum, Winnipeg, Man.
Provincial Museum of Natural History and Anthropology, Victoria, B.C.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, the lending of specimens, slides, filmstrips or motion picture

films to schools, and the training of student-teachers in the educational use of the museum. A number of museums have special programs for children, not directly associated with school work. These include Saturday lectures and film showings, activity groups, nature clubs, and field excursions.

For adults, museums offer series of lectures or film showings from autumn to spring, and possibly some special showings during the tourist season. Guided tours for adult groups are usually available throughout the year. Staff members may be sent to give lectures to service clubs, church groups, parent-teacher associations, and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. At least seven Canadian museums have had regular radio or television programs, and others have made occasional contributions. Some historical museums have annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

Through such activities and methods, Canadian museums serve as important adjuncts to the educational system and as centres for informal education, both juvenile and adult. Thus, they take their place with public libraries as major auxiliaries in the educational program of Canada.

Section 3.—The Educational and Cultural Functions of the Canadian Broadcasting Corporation

Many hours of educational or semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation in English and in French. Whether these programs are directed to children or adults, entertainment is combined with information whenever possible. Spoken-word programs, presented as readings, talks, discussions, documentary programs, dramatizations or in forms combined with music, cover a very wide range of interests. The fiscal year 1962-63 was a busy one for the CBC programmers involved in educational, cultural and youth programs.

Pre-school Broadcasts.—A number of programs are planned for children from three-and-a-half to six years of age. The aim is to have these at the same time educational and entertaining. Both *Playroom* (radio) and *Nursery School Time* (television) base their planning on the advice of kindergarten and nursery school experts. The topics acquaint the child with new and interesting aspects of life about him, in his home and in his community.

The English television network regularly carries the production *Chez Hélène* to introduce the French language to the pre-school child by means of the successful Tan-gau method of instruction. In another television series—*The Friendly Giant*, a highly popular story-telling program—entertainment is combined with an effort to develop in the child an awareness of social values.

For the first time since CBC television began operating, regular morning network programming was scheduled for October 1963. *Chez Hélène*, *Nursery School Time*, the national school broadcasts and other educational programs are being telecast in the 10-11 a.m. period across Canada.

School Broadcasts.—The CBC provides an active schedule of school broadcasts which are planned according to recommendations made to the School Broadcasts Department by a group of educators representing each of the provincial Departments of Education. This body is known as the National Advisory Council on School Broadcasting. The programs produced have the aim of enriching the curricula, adding to the students' comprehension and appreciation of a topic through the use of the varied resources of radio and television. For example, in radio, an annual presentation of a Shakespearean play by the best actors in the country gives many students across Canada their only opportunity

to hear a dramatization of such a play. The radio schedule each year also contains dramatizations of events in Canadian history, along with many other topics. In co-operation with the Quebec Department of Youth, the CBC in 1962-63 started a service of school broadcasts in that province, thus providing school broadcasts in all ten provinces. While most of these broadcasts are presented on a regional or provincial basis, a number of informational programs were offered on the English radio and television networks covering a wide range of school subjects from literature to folklore, from physics to physical education. On the French networks the subjects covered a similar range for students at both primary and secondary levels.

Leisure Programs for Children.—Programs that do not relate to a specific school curriculum but still have a broadly educational or informational purpose are presented for children. The program *Time of Your Life* for children of ten to fifteen years of age presents four types of shows—the magazine type, feature films, dramas and music specials. On the French network, programs such as *Pirouette* and *Am-stram-gram* fulfil a purpose similar to that of *Time of Your Life*. Other programs presented for children by the French network include *Coucou*, *Orientation*, *Images en tête*, *Pierres vivantes* and *À la pointe de l'exploration*.

A number of experiments in programming for both the English and the French networks have begun, such as the natural science program *La vie qui bat*, which appears in English under the title *This Living World*.

Adult Education.—Programs of an adult education nature are presented frequently by the CBC on its radio and television services and are planned in co-operation with various educational organizations. The CBC is an active participant in the work of the Joint Planning Commission, a body established by the Canadian Association for Adult Education for exchange of information and co-ordination of plans for adult education in Canada.

Citizens' Forum, a series telecast for the past eight years, uses discussions, public debates and small seminars to describe important issues of the day. It is arranged jointly by the Canadian Association for Adult Education and the CBC. Its French counterpart, *Place publique*, has been planned in co-operation with La Société canadienne d'éducation des adultes. Similar types of programs are prepared specially for rural listeners under *National Farm Radio Forum* which is arranged by the CBC in co-operation with the Canadian Federation of Agriculture and the Canadian Association for Adult Education. This unique educational program involves listening groups who continue the discussion of the topic at the conclusion of the program and funnel their opinions to provincial and national centres for use and distribution. Other daily service and educational programs are provided for farmers. *Country Calendar* and *Country-time* are weekly half-hour TV programs of a service and educational nature designed to keep farmers and the general public in tune with agricultural conditions and developments. *Le réveil rural* on radio and *Les travaux et les jours* on television are French-language counterparts of the English farm programs.

For more than a decade the summer evening sessions of the Couchiching Conference have been broadcast. This week-long conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions. Other radio programs of an educational nature are *Science Review*, which examines important discoveries in the field of the natural sciences and their branches; *life*; *University of the Air*, a series varying from four to eight talks prepared and broadcast by distinguished professors in their particular fields; and, on the French radio network, *L'université radiophonique internationale*, a series of talks exchanged with other countries on cultural and scientific subjects.

On the French network, *Les Chansons de la maison* presents a series of programs relating to parents and children, and general questions sent in by parents are answered

by psychologists. For women listeners, the daytime program *Fémina* is presented five times a week. The French network also broadcasts a number of weekly programs dealing with fine arts, music, literature, theatrical arts, sciences, religion and philosophy, under the auspices of Le Service des émissions éducatives et d'affaires publiques.

In addition to *Citizens' Forum*, regular television programs are *Close-Up*, *Premier Plan* and *Background*. The first two present weekly half-hour interview and documentary programs in which the emphasis is on the programs involved. The latter offers six one-hour documentaries on the background of significant issues, events and ideas, both international and domestic. *Inquiry* is a weekly program on national affairs produced in Ottawa. *The Lively Arts* is a weekly program of insight into the creative process. *The Nature of Things* describes the work of scientists and science for an audience whose only preparation may be curiosity about the world around them. *Take Thirty*, a new week-day show for women, has a different 'flavour' on each program: entertainment and interviews of performers; travel topics and features on events in Canada and abroad; cooking, child care and household management; discussions on social problems; interviews of men and women from the sporting world. The closest radio counterpart of *Take Thirty* is *Trans-Canada Matinee*. *In View* examines the arts and North American attitudes toward them, calling for comments from guests who are closely associated with the field under discussion. *Explorations*, a series of documentaries and dramatizations, examines questions in the fields of sociology and history. Special programs on the Winter Conference of the Canadian Institute on Public Affairs are also telecast; this three-day conference examines sociological questions in open meetings and group discussions.

Since the consolidation of the CBC's English-language radio networks, radio station CJBC in Toronto has had to alter its role significantly. The most striking result has been the scheduling of a comprehensive two hours of adult-educational programming nightly, Monday through Friday, under the general title of *The Learning Stage*. The program deals with literature, sociology, science, music, labour relations, philosophy, ecology, creative processes, theatre, arts, ethics, political science and French.

In co-operation with universities in Toronto, Montreal and Ottawa, locally broadcast television series are prepared under the title *Live and Learn*. These programs are designed to give a general appreciation of academic subjects such as physics, chemistry, literature and psychology. Experiments in the production of courses for university credit are in progress in Montreal.

Section 4.—The Educational and Cultural Functions of the National Film Board

The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board also produces and distributes filmstrips and still photos on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest". Films are produced primarily in the English and French languages and, whenever possible, foreign language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16mm. community film program is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. There are more than 700 national, provincial and community film distribution outlets from which thousands of 16mm. prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

A large part of the 16mm. community film audience is reached through classroom showings, indicating progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend is the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad and newsreel features are also issued regularly for theatrical and television purposes. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

A substantial proportion of the Board's production and distribution program is concerned initially with television at home and abroad. Series of original films are shown regularly over English and French language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16mm. print circulation is carried on through posts of the Departments of External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, New York and Chicago in the United States, New Delhi in India, and Buenos Aires in Argentina, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with those of Canada, aiding international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

Section 5.—The Canada Council

As a result of recommendations made by the Royal Commission on National Development in the Arts, Letters and Sciences, appointed in 1949, the Canada Council was established in 1957 to promote the study and the enjoyment of, and the production of works in the arts, humanities and social sciences. A sum of \$100,000,000 from the public treasury was granted to the Council, one half of which was placed in a University Capital Grants Fund to assist institutions of higher learning to expand their building facilities in the arts, humanities and social sciences, and the remainder set up as an Endowment Fund, the current annual income from which is approximately \$3,000,000.

The Council is made up of 19 members appointed by the Prime Minister for terms of three years, plus a chairman and a vice-chairman who are selected for five-year terms. Members are ineligible for reappointment during the 12 months following their second consecutive term on the Council. The organization must meet at least three times a year to consider applications made to it by organizations and individuals across the country. The day-to-day administrative work is carried out by a permanent staff in Ottawa.

University Capital Grants Fund.—One of the principal responsibilities of the Council is toward Canada's institutions of higher education. The Fund enables the Council to make grants to universities and other institutions of higher learning by way of capital assistance in respect of building projects, with the following limitations: (1) a grant for any one project may not exceed one half the total expenditure made in respect of that project; (2) in any province the aggregate of the grants made may not exceed an amount that is in the same proportion to the aggregate amount credited to the University Capital

Grants Fund as the population of the province (latest census) is to the aggregate population of the provinces in which there is a university or other similar institution of higher learning. By the end of 1962, \$35,000,000 had been authorized for payment by the Council and more than 70 institutions had drawn upon the Fund for a wide variety of buildings; libraries, classrooms and residences claimed the major share.

Aid to Individuals.—Because in 1957 less than 10 p.c. of the graduate fellowships available in Canada were for studies in the humanities and social sciences, the Canada Council allocated over \$1,000,000 from the income of the Endowment Fund to the establishment of a scholarship and fellowship program to assist in meeting the rapidly growing needs of the future for university teachers. In five years, more than 2,200 scholars have been aided through awards at the master's, doctorate and postdoctorate level. As a further stimulus to academic pursuits, grants are made to universities to enable them to bring outstanding lecturers to their campuses and travel grants are awarded to permit Canadians to attend international conferences and thus maintain contact with scholars from other countries.

Individual assistance is also given in the arts. By the end of 1962, nearly 700 scholarships had been awarded to enable singers, dancers, painters, writers and other performing and creative artists to continue their studies or perfect their arts. Other artists had benefited from the Council's program of commission grants; such grants enable theatres, orchestras, soloists, art galleries or museums to commission and perform or display original works by Canadian artists.

Aid to Organizations.—A large proportion of the revenue from the Endowment Fund is devoted to a program of assistance to organizations in the arts and letters. Since income from this source is strictly limited, the Council seeks to support the best talent, which involves a very large investment in some of the major population centres and at the same time covers all areas of the country. This it does by combining grants for excellent service in local or regional areas with awards to enable organizations to travel to remote parts of the country where the arts are less readily available. It also seeks to ensure local support by insisting that organizations receiving grants find additional revenue from other sources. In the year ended Mar. 31, 1962, the Council gave about \$1,571,000 to organizations in the arts, humanities and social sciences. Nine symphony orchestras received a total of \$245,000 and \$174,000 went to other musical organizations including choirs, string orchestras and chamber ensembles. More than \$7,000 was spent to enable music groups to tour and \$9,000 was awarded to permit the commissioning of new works. About \$482,000 was granted to promote the theatre, opera and ballet; of this amount, some \$170,000 went to the National Ballet Company of Canada, the Royal Winnipeg Ballet and Les Grands Ballets Canadiens. A total of \$88,000 over two fiscal years went toward helping opera in its 1962 season, and \$140,000 was awarded to the theatre. Festivals in Stratford, Vancouver and Montreal received \$75,000 in assistance from the Council, and a sum of \$27,000 was allocated to the Canada Council Train to introduce more Canadian students to the best Shakespearean drama. The visual arts received about \$117,000 and \$51,000 was awarded in aid to publication, bringing to just over \$1,157,000 the amount spent on the arts.

Considerably less assistance went to organizations in the humanities and social sciences since the bulk of the scholarship program is directed toward these subjects. Aid was given to visiting lecturers, to publications and to several academic projects. Altogether, \$414,000 was given for these purposes.

UNESCO.—The Act establishing the Canada Council also provided that the organization should undertake certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. The Council accordingly established a National Commission for UNESCO with 26 members and approximately 30 organizations with "co-operating body status", and also provided the secretariat for the Commission. With

the assistance of the National Commission, the Council is responsible for the co-ordination of UNESCO program activities in Canada, for Canadian participation in UNESCO program activities abroad, and for proposals for future UNESCO programs. In all these matters the Council works in close association with the Department of External Affairs and serves as the normal channel of communication between the Department and the Commission. In the year ended Mar. 31, 1962, the Council spent close to \$50,000 in addition to indirect administrative expenses on the UNESCO program.

Section 6.—Library Services

The National Library.—The National Library of Canada came into existence formally on Jan. 1, 1953 by the proclamation of the National Library Act (RSC 1952, c. 330). On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Act established a National Library Advisory Council, consisting of the National Librarian, who serves as Chairman, the Parliamentary Librarian, and twelve appointed members, at least one of whom must be from each of the ten provinces.

By 1961, although the Library was still housed in temporary quarters and only a limited purchasing program could be undertaken, the book collection consisted of about 250,000 volumes, supplemented by micro-copies of more than 100,000 additional titles. Under the terms of the Copyright Act and the Library's own Book Deposit Regulations, 5,855 titles were received in the year ended Mar. 31, 1962, 3,097 of which were related in some direct way to Canada.

Canadiana, the Library's monthly catalogue of new books and pamphlets relating to Canada, described over 11,000 items in 1961; these included trade and general publications, and official publications of the federal and provincial governments. *Canadiana*, which has been published since 1950, is cumulated annually and a cumulated index is planned.

The National Union Catalogue lists nearly 8,000,000 volumes in more than 175 government, university, public and special libraries in all provinces. New accessions are reported regularly by these libraries, and the Union Catalogue thus forms a continuously up-to-date key to the main book resources of the country. During the year ended Mar. 31, 1961, the Reference Division was asked to locate 14,409 titles and it is noteworthy that copies of 75 p.c. of them were found in Canadian libraries. About one third of the requests were for books in the field of science and technology and 80 p.c. were for books published since 1925.

In addition to *Canadiana*, the National Library publishes *Canadiana Selections*, a short list of notable books issued in Canada during the past year, and also publishes an annual cumulation of the *Canadian Index to Periodicals and Documentary Films*.

Public Libraries.—Public libraries in Canada are organized under provincial public library legislation and direction, and are operated and regulated by municipal and regional boards. In 1961, there were 825 public libraries serving cities, towns and villages, and 50 regional and provincial public library systems. The total stock of all public libraries in Canada was almost 15,500,000 volumes, just over one volume per person served and somewhat less than one volume per capita of the total population. Circulation was over 60,000,000, or about four volumes per capita. Almost half of this circulation was to boys and girls in the age group of 5-14 years.

In addition to circulating books, periodicals and pamphlets, large public libraries maintain reference collections for use in the library, and provide audio-visual materials, such as films, filmstrips and sound recordings, for loan or use in the library. Other special activities include bookmobile service to schools and other community depots, story telling, plays and projects for juvenile readers, club activities, adult education groups and programs, and service to hospitals, reform institutions and camps.

Local funds accounted for about 85 p.c. of the support of public libraries in 1961, and provincial grants for the remainder. The current operating payments of all public libraries were the equivalent of \$1.06 per year per capita in 1961.

1.—Summary Statistics for All Public Libraries, 1961

Province or Territory	Population Served	Libraries	Stock of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full-Time Staff
	No.	No.	No.	No.	\$	No.
Newfoundland.....	457,853	3	363,294	877,699	139,412	34
Prince Edward Island.....	104,629	2	122,355	240,172	54,218	9
Nova Scotia.....	471,892	13	395,852	1,782,795	707,394	101
New Brunswick.....	149,834	6	102,261	593,812	147,397	26
Quebec.....	2,952,431	218	2,391,032	4,348,260	1,736,333	284
Ontario.....	5,984,184	317	7,779,415	33,319,907	10,510,464	1,415
Manitoba.....	792,226	16	449,696	2,362,896	796,803	120
Saskatchewan.....	925,181	76	689,464	2,293,957	973,840	125
Alberta.....	1,331,944	135	1,266,868	4,989,431	1,388,370	229
British Columbia.....	1,629,082	75	1,806,401	9,783,874	2,841,009	402
Yukon and Northwest Territories.....	12,423	14	29,637	11,380	4,767	—
Totals, 1961.....	14,811,679	875	15,396,275	60,604,183	19,300,007	2,745
Totals, 1960.....	14,349,449	846	13,866,935	56,187,325	17,354,429	2,527

University, College and School Libraries.—In 1960-61, the 34 larger Canadian institutions of higher education had almost 7,000,000 volumes in their collections to serve over 100,000 students, representing 87.7 p.c. of all full-time university enrolment in Canada. Their expenditures averaged almost \$60 per full-time student and they had 946 full-time employees, almost one third of whom were professional librarians.

According to school board reports, almost half of the public elementary and secondary schools in centres of over 10,000 population had centralized libraries in 1961. The 1,613 libraries served almost 1,000,000 pupils, and averaged 2,700 volumes for 588 pupils. Average expenditure for books and other library materials was \$2.36 per pupil served.

2.—Book Stocks in the Larger Academic Libraries and Enrolment Served, by Province, Academic Year 1960-61

Province	University and College Libraries				Centralized School Libraries			
	Libraries	Volumes	Enrolment Served	Expenditures per Full-Time Student	Libraries	Volumes	Enrolment Served	Payment for Books per Pupil
	No.	No.	No.	\$	No.	No.	No.	\$
Newfoundland.....	1	60,000	1,238	57.58	..	5,644	1,387	0.97
Prince Edward Island.....	—	—	—	—	2	98,136	28,018	0.66
Nova Scotia.....	3	357,279	4,088	54.93	59	72,530	19,351	0.68
New Brunswick.....	2	210,322	2,997	58.73	36	1,090,003	248,478	3.06
Quebec.....	8	1,881,557	35,154	29.65	494	1,445,287	369,441	1.94
Ontario.....	13	3,065,134	27,705	93.17	512	239,404	48,376	3.82
Manitoba.....	2	309,744	4,959	54.22	73	148,891	20,248	2.58
Saskatchewan.....	1	211,719	4,828	51.51	50	532,328	75,834	3.81
Alberta.....	2	321,952	6,803	83.12	182	693,882	137,979	2.48
British Columbia.....	2	575,679	12,618	65.89	205	—	—	—
Totals.....	34	6,993,386	100,390	59.63	1,613	4,326,105	949,112	2.36

Special Libraries.—More than 300 government, business, technical and professional libraries exist in Canada, chiefly in Montreal, Ottawa and provincial capitals. These

libraries are designed chiefly to serve the personnel employed in their respective establishments. The most recent available data (for 1956-57) show 84 Federal Government libraries with more than 2,500,000 books and pamphlets; 91 provincial government libraries with a total stock of over 2,000,000; and 154 private business, professional and technical libraries with almost 1,500,000 volumes. These special libraries employed more than 1,000 full-time staff in 1956-57.

Professional Librarians.—Canada has five Library Schools—at the Universities of Montreal, McGill, Ottawa, Toronto and British Columbia—which award a Bachelor of Library Science degree upon completion of a one-year postgraduate training course. In 1962, 201 persons graduated, joining the ranks of the more than 2,000 professional librarians in all types of libraries in Canada. The median beginning salary for the 1962 graduates was \$4,800.

3.—Median Salaries of Librarians in Professional Positions, 1960-61

Position	Public Libraries in Centres over 25,000 Population	Regional and Co-operative Public Libraries	Provincial Public Library Services	University and College Libraries ¹	Total Professional Librarians
	\$	\$	\$	\$	No.
Chief Librarian.....	6,832	5,125	6,333	8,167	128
Assistant Chief Librarian.....	6,999	—	—	7,600	32
Division, Department or Branch Head.....	6,336	4,833	6,350	6,265	192
General Librarian.....	5,129	3,975	5,107	4,884	667

¹ 1961-62 figures.

PART III.—SCIENTIFIC AND INDUSTRIAL RESEARCH

Section 1.—The National Research Council*

History and Organization.—Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the Honorary Advisory Council for Scientific and Industrial Research—now known by the short title “National Research Council”. The early Council provided for the planning and integration of research work, organization of co-operative studies, postgraduate training of research workers, and prosecution of research through grants to university professors. This promotion and encouragement of research formed the basis of the Council’s work from 1916 to 1924.

The creation of a central research institute, to carry on research in pure science in relation to standards of measurement, quality and composition of material, and in science applied to the industries of Canada, had been urged as early as 1918. A special committee of Parliament endorsed the proposal and in 1924 the Research Council Act was revised to include national research laboratories. Temporary quarters were secured and research on magnesian refractories for steel furnaces was carried out so successfully that a wartime industry, established during World War I, was re-established on a large scale. As a result of this achievement, the Government, in 1929-30, provided funds for new research facilities.

The National Research Building on Sussex Drive, Ottawa, was opened in 1932 and in 1939 construction was begun of an aerodynamics building on a 130-acre site on the Montreal Road, just east of the city. This site now comprises some 400 acres and houses most of the Council’s laboratories. A Prairie Regional Laboratory built on the campus of the University of Saskatchewan has been in operation since June 1948, and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax, N.S., was opened in June 1952.

* Prepared by R. A. Lay, Public Relations Office, National Research Council of Canada, Ottawa.

Under the terms of the Research Council Act, the National Research Council has charge of all matters affecting scientific and industrial research in Canada that may be assigned to it by the Committee of the Privy Council on Scientific and Industrial Research. In discharging these responsibilities, the Council may undertake, assist or promote research. Its duties include the utilization of Canada's natural resources; the improvement of industrial processes and methods; the discovery of processes and methods likely to expand existing industries or to develop new ones; the utilization of industrial wastes; investigation and determination of physical standards, methods of measurement, and fundamental properties of matter; the standardization and certification of scientific and technical apparatus used by government and industry; the determination of standards of quality for materials used in public works and government supplies; investigation and standardization, at the request of industry, of industrial materials or products; and research intended to improve conditions in agriculture. The Council also has the duty of advising the Privy Council Committee on questions of scientific and technological methods affecting the expansion of Canadian industries or the utilization of the country's natural resources.

The Council's laboratories are organized in nine divisions and two regional laboratories, each with its own director. Five divisions are engaged in applied and fundamental studies in the natural sciences—applied biology, applied and pure chemistry, and applied and pure physics. Four others are devoted chiefly to engineering work—building research, mechanical engineering, radio and electrical engineering, and the National Aeronautical Establishment. The two regional laboratories carry out research related to the resources of the Prairie and Atlantic regions.

During World War II, the Council was responsible for all research carried out for Canada's three Armed Services. After the War, most of the military work was transferred to the Defence Research Board (see Chapter XXV). Another wartime development, the Atomic Energy Project, was constituted as a separate Crown company, Atomic Energy of Canada Limited, in 1952 (see pp. 368-373).

A Medical Research Council, fully responsible for the support of medical research but functioning under the general administration of the National Research Council, was established in November 1960 (see pp. 268-270).

The National Research Council consists of the President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour, and research in science and engineering. Many of the members are drawn from Canadian universities. The Council reports to Parliament through the Committee of the Privy Council on Scientific and Industrial Research.

The Council's current operating budget is about \$46,000,000. Approximately \$17,000,000 is required for foundation work—scholarships and research grants in science and engineering, plus the activities of the Medical Research Council—and the remainder is used to operate the laboratories and to provide for the Council's Industrial Research Assistance Program. Of the Council's 2,600 employees, some 730 are scientists and engineers.

Links with Industry.—The application of science to Canadian industry has always been one of the major concerns of the National Research Council. Since 1917, representatives of industry, government and the universities have co-operated, through NRC Associate Committees, in solving pressing industrial and economic problems. There is a constant flow of personnel and information between NRC laboratories and those of industry, and roughly 90 p.c. of the Council's own effort involves applied research intended for industrial use. Contract research on specific projects and a wide variety of testing and standardization work are undertaken. Inventions from NRC laboratories are carried through the patent stage, then made available for manufacture through Canadian Patents and Development Limited (see pp. 118-119).

One of the Council's most important activities is its Technical Information Service. This consists of field engineers who visit manufacturing establishments, and a staff of trained researchers in Ottawa who use the technical literature available through the Council's library. All inquiries are handled but the Service is particularly interested in helping small firms with no research or information facilities. Free advice is given on materials and processing, equipment, plant design and packaging and on such topics as wage incentives and inventory control.

Direct financial assistance for research performed by Canadian industry was begun by the Council during 1962. Under this arrangement the Council makes grants supporting long-term applied research and development work proposed and carried out by industry. Aid is given on a shared-cost basis, with industry supplying at least half the funds for any one project. Companies of all sizes, representing a wide range of industrial activity, are eligible for assistance, and the companies retain all rights arising from the work. Operating in the last six months of 1962-63 (October to March, inclusive) the program resulted in 62 new research projects involving 44 Canadian companies. With a dollar value for the six-month period of \$1,700,000, the work created more than 260 new research positions.

Foundation Aspects.—University research in science and engineering has been supported by the Council since its inception in 1916. This aid has been of considerable help to the universities in building up the excellent graduate schools that now exist in Canada. Awards to individuals make up most of the university support program. Included are research grants to university staff used for employing assistants and purchasing equipment and supplies, postgraduate scholarships, and postdoctorate fellowships. Approximately 1,200 research grants and 720 scholarships and fellowships were awarded in the year ended Mar. 31, 1963 at a cost of \$10,395,000.

General promotion and encouragement of university research—the remainder of the program—includes publication of six Canadian journals of research; contributions to scientific organizations and functions, Canadian membership in international scientific unions, and the administrative costs of the program. Expenditures for these activities in 1962-63 were \$1,103,000. An *Annual Report on University Support* describes the foundation program in detail.

In 1948 the Council instituted a program of postdoctorate fellowships, open to Canadians and to the nationals of all other countries. Originally these were tenable in the Council's own laboratories but the training and experience brought to the work by the young scientists proved so stimulating that the program has been gradually expanded. Fellowships are now tenable at Canadian universities (these are considered part of the university support program), in the laboratories of Atomic Energy of Canada Limited, and in the federal Departments of Agriculture, Forestry, Mines and Technical Surveys, and National Health and Welfare. More than 250 of these awards are being held at the present time (March 1963), mostly in chemistry, physics and biology.

Applied Biology.—This Division's program covers practical problems related to the national economy and fundamental studies in microbiology, biochemistry and biophysics as a basis for future application in agriculture, medicine and industry.

Apparatus and techniques for preparing, preserving and storing food make up a large part of the work, with particular attention in recent years to food freezing, cold storage and refrigerated transport. Recent studies have involved further tests on a process developed in the Division and now widely used in industry for the immersion freezing of poultry, quality loss in poultry meat during freezing and refrigerated storage, and an improved cooling system for frozen food trucks. The physical and chemical reactions preventing coagulation in evaporated milk during sterilization were also investigated. Microorganisms related to the preparation and preservation of food are studied, particularly those found in salted foods and in cheese, and those that grow at low temperatures. A national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Considerable effort is devoted, also, to questions of animal and plant physiology. Studies of the mechanisms by which mammals, birds and man adapt to cold have provided important basic information on cell, muscle and metabolic activity, and also serve to explain practical problems such as the high death rate of newly born caribou. Fundamental plant processes such as translocation are investigated, and an exhaustive study is being carried out on strains of blue-green algae believed responsible for cattle deaths. Plant fibres such as cellulose—the skeletal material of plants—and the structure and function of plant cells are also examined.

Other studies involve fermentation mechanisms and enzymology, and the structures of proteins, carbohydrates and fats. One group, among its other projects, is engaged in long-term statistical studies of protein variability in wheat and wheat exports. The work has been expanded recently to include the effects of weather factors on protein content.

Applied Chemistry.—The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved solving immediate specific problems, a larger part of the Division's effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results. For instance, a long-term investigation on the contacting of fluids and solids—an operation vital to many chemical engineering procedures—has resulted in a successful commercial operation for drying grain. The same method can be extended easily to chemical reactions and to removing liquids from other materials.

Another long-term project of considerable industrial potential has concerned the factors responsible for the stability, or the destruction, of suspensions of solids in liquids and a method was devised for easily separating almost any suspended solid from the liquid surrounding it. This work was expanded recently to include the separation of dissolved solids. It has been shown that virtually all dissolved salts can be removed from water by filtration through an appropriate medium, and tests with other materials are in progress. Then, too, the study of chemical reactions at very high temperatures—carried on over the past several years—has resulted in the successful preparation of a stable polymer that could not be produced by conventional means.

The twelve sections of the Division are: analytical chemistry, chemical engineering, colloid chemistry, kinetics and catalysis, metallic corrosion and oxidation, metallurgical chemistry, applied physical chemistry, physical organic chemistry, high polymer chemistry, high pressure, rubber and textiles. Much of the work falls under the general headings of petroleum or corrosion chemistry, in that several sections work on topics related to one of these fields.

Pure Chemistry.—The Division of Pure Chemistry is organized around a nucleus of outstanding Canadian chemists who direct about 50 young postdoctorate fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic chemistry.

The work in organic chemistry includes investigation of the structures of alkaloids, studies of the infrared spectra of steroids, and the synthesis of porphyrins and of compounds labelled with isotopes. Other sections deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others study certain aspects of surface chemistry such as the thermal properties of simple solids and imperfections in the bulk and the surface of alkali halide crystals, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the absorption of fluids by active carbons. There is also a small group interested in the chemistry of fats and oils, and one engaged in fibre research.

Applied Physics.—The work in Applied Physics is divided between research projects likely to be of practical value and the continual development of the fundamental standards on which measurements generally are based. All the fundamental physical standards for Canada are housed and serviced in this Division, which now has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature and radiation. The sections of the Division are: acoustics, electricity and mechanics, heat and solid state physics, instrumental optics, interferometry, photogrammetric research, radiation optics, special problems, and X-rays and nuclear radiations. Industrial problems receive considerable attention, particularly calibration work and industrial noise abatement.

Examples of specific projects now under way include a study of colour tolerances in the production of coloured materials, a special type of lighting unit expected to be particularly useful at airports, the thermal and electrical properties of ceramics (important in rocketry, nuclear energy and other fields), and the establishment of an international standard neutron source. Work has continued on the measurement of line standards of length in terms of wave-lengths of light, and on the use of atomic or molecular properties to define time intervals. Several of the Division's developments are now being produced commercially. Among these are noise-excluding high fidelity earphones, a revolutionary analytical plotter for making maps from aerial photographs, a six-figure potentiometer, and a precision direct reading thermometer bridge.

Pure Physics.—Investigations are under way on cosmic rays and high energy particle physics, low-temperature and solid-state physics, spectroscopy, X-ray diffraction, and theoretical physics. The work is on fundamental problems that do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields. Important advances in the study of cosmic rays and energetic particles have been made recently by means of a specially designed instrument package operating aboard the Canadian earth satellite *A'louette*. The package is sending back vital new information about the Van Allen radiation belts and about the artificial belts created by atomic explosions.

The low-temperature and solid-state group studies the electrical, thermal and mechanical properties of metals and semi-conductors especially at very low temperatures. The plasma physics group, only recently established, is expected to make basic contributions to a field which may, in the long run, prove to be of importance in problems of controlled nuclear fusion. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their microwave, visible and ultraviolet spectra. The theoretical physics group is concerned with theoretical problems in atomic, molecular and nuclear physics.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material. Two of the major projects concern narcotics and vanadium minerals.

Building Research.—Technical improvements in housing are the primary concern of this Division. The research program therefore covers all aspects of housing design, building materials and components, and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon, Vancouver and Norman Wells.

Examples of Division projects are the behaviour of cement aggregates and light-weight concretes; the materials and techniques of masonry construction and plastering; atmospheric corrosion of metals; paint and acoustics research; and examination of the performance of walls, windows, chimneys and domestic heating systems. Other studies involve the bearing strength of ice; the fundamental properties of various soil types, including permafrost and muskeg; frost action in soils; avalanche research; and the effects

on buildings of ground vibrations caused by blasting or earthquakes. A unique fire research laboratory provides facilities for all types of fire resistance, fire prevention and fire fighting tests.

As the Division concentrates on building problems peculiar to Canada, much of the work concerns the performance of buildings and building materials in cold weather. In this connection, double-glazed windows and lightweight metal and glass curtain walls, used increasingly in modern buildings, have been examined. Special studies have been made to improve winter building techniques and there is a section devoted to problems of building in the Far North.

Many results of the Division's research are expressed in the National Building Code, an advisory document of building standards now used by municipalities accounting for half the total urban population of Canada. The Associate Committee on the National Building Code, whose secretariat forms one section of the Division, also establishes the building regulations for all housing constructed under the National Housing Act.

Mechanical Engineering.—This Division works mainly in the fields of mechanics, hydrodynamics (hydraulic engineering and naval architecture) and thermodynamics. Extensive testing and specification work is undertaken for a variety of industries and for government departments. Much of the work consists of continuing projects related to land, sea and air transportation.

The mechanics activities include mathematical analysis and computation, the development of instruments and servomechanisms, and research on mechanical devices such as gears. One group, working in the field of bio-medical engineering in collaboration with surgeons, has devised a tool for end-to-end joining of blood vessels by a simple stapling operation.

In hydraulics, a number of investigations and models have been made for improving Canadian harbours. A new kind of breakwater has been developed which absorbs waves rather than reflecting them, and a breakwater utilizing this principle has been constructed at Baie Comeau. A promising scheme has also been developed for reducing silt accumulation in harbours by wave energy. The ship laboratory has continued its studies on propeller, rudder and hull design and performance.

Railway work is devoted mainly to locomotives and the riding qualities and mechanical behaviour of freight cars. Improved braking systems and cheaper fuels, lubricants and injectors have been developed. A long-term study is being made of the possible use of gas turbines in locomotives. The application of gas turbines to aircraft taking off and landing vertically is also being explored, together with the thermodynamic, aerodynamic and control problems that this type of aircraft involves. Considerable research is also being done on the behaviour of lubricants at high pressures, and that of gases at extremely high temperatures.

National Aeronautical Establishment.—The National Aeronautical Establishment is designed to meet the aeronautical research needs of military and civil aviation, to co-operate with the Canadian aircraft industry, and to carry out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics.

Aerodynamics research from low speeds up to about $4\frac{1}{2}$ times the speed of sound is carried out in the Establishment's wind tunnels. Considerable attention is being given at present to low-speed problems of vertical and short take-off aircraft. Other studies include work on the aerodynamic characteristics of high-thrust propellers, on wings with submerged fans and on wings immersed in powerful slip-streams. The research on structures and materials involves investigation of aircraft accidents, the fatigue and creep of aircraft structures, the determination of flight loads, aircraft design problems, and non-metallic materials. The latter study is part of a research for low density, high strength non-metallic materials resistant to high temperatures that could be used for structural purposes. The

flight mechanics program covers research on flight safety and flying stability and control; the development of a crash position indicator for locating crashed aircraft; atmospheric physics; anti-submarine magnetometry; and the avoidance of aircraft collisions.

A growing and highly diversified program of assistance to smaller industries is developing. Most of the work relates to product development, product improvement, or testing.

Radio and Electrical Engineering.—The work of this Division includes engineering problems of interest to Canadian industry and fundamental research in electrical science. The Division co-operates with the Armed Services and associated industries in designing, producing and evaluating new equipment.

Engineering problems include long-distance transmission of high-voltage direct current, radio remote-control of navigational aids, current and potential transformer calibration, high-frequency standards, and the development of electronic medical instruments and operating-room facilities. The Division maintains the best-equipped antenna laboratory in Canada and provides considerable assistance in the development and manufacture of antennas and radomes.

Examples of recent developments by the Division are a radar-data transmission system which provides air traffic controllers with a continuous display of activity at two or more adjacent airports, a simple marine distress beacon operating in the frequency band used by RCAF Search and Rescue craft, and a creative tape recorder much in demand in electronic music studios. A highly mobile counter-mortar radar designed by the Division went into commercial production in 1961.

Fundamental studies are carried out on radio wave propagation, radio astronomy, upper atmosphere research, and electronic and solid-state research. A new radio observatory is being developed in Algonquin Park, where a 33-foot diameter radio telescope is in operation. The Division also provides engineering support for Canada's upper atmosphere rocket-sounding program, and undertakes research in space electronics.

Atlantic Regional Laboratory.—The Atlantic Regional Laboratory is engaged in practical and fundamental studies related to the resources and industries of the Atlantic Provinces. The work follows three general lines: chemical reactions at high temperatures; structures and reactions of naturally occurring organic compounds; and the biochemistry and physiology of fungi, marine algae, mosses, lichens, ferns and higher plants. Examples of specific projects are studies on the collagenous proteins in cod tissues; the loss of ascorbic acid (Vitamin C) in potatoes during storage; and the dietary effects of seaweed components. The work on nutrition is related not only to food industries of the Atlantic Region but to the wider field of public health in general. The high temperature studies are aimed at providing basic information of use in steel-making and related industries. A certain amount of engineering work is also undertaken. Recent studies have centred around the development and use of a semi-continuous dryer for commercially important plant materials.

A recent development of considerable significance is the establishment of a close working relationship with Dalhousie University, Halifax. Under the new arrangement, students acceptable to the University's Faculty of Graduate Studies may now carry out research in the Atlantic Regional Laboratory, directed by Laboratory staff members holding unpaid appointments in the Faculty. The immediate aim of the scheme is to expand the facilities for graduate studies in the Atlantic Region. In the long run, the objective is to help create a strong scientific background conducive to large-scale development by industry.

Prairie Regional Laboratory.—One of the chief aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies. This is achieved by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs. Research is therefore carried out on the properties and

reactions of plant components, and on the biological, chemical and engineering processes for turning them into other compounds. The development of oil-seed crops as alternatives to seed crops has received considerable attention.

For some time, the Laboratory has studied major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is also being given to minor plant constituents—such as phenols, flavonoids and terpenes, which are known to have fungicidal and germicidal properties. A laboratory has been set up to systematically study extractives from local plants and shrubs.

The engineering and process development group is engaged in research on continuous fermentation processes, pulping processes on wood and straw fibres, and the effects of glyceride structure of fats and oils on the quality of margarines and shortenings. Large-scale processing and pilot-plant-scale operations are carried out. There is also a group working in the field of mycology, which is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

Administration.—Administration of the foregoing laboratories is organized as a Division of Administration and Awards, which exists only to serve the scientist. The five service units of this Division are: Awards and Committee Services (Awards, Committees, Publications, Research Journals); Administrative Services (General Services, Purchasing, Personnel); Information Services (Technical Information Service, Library, Public Relations Office, and Liaison Offices in Ottawa, Washington, London, and Paris); Plant Engineering Services; and Legal and Patent Services. The latter group works closely with Canadian Patents and Development Limited (see pp. 118-119). An expert on economic research acts as special assistant to the Assistant Director, Information Services.

Section 2.—Research in the Atomic Energy Field*

The high energy yield from the fission of uranium is the key to the prospect of economic nuclear electric power. The yield is so high that the cost of the raw uranium is a very minor component of the cost of electric power. It will be about 5 p.c. of the total and may be contrasted with 50 p.c. or more paid for coal in some large conventional generating stations. The largest component in the over-all economy of nuclear power systems is reactor plant construction and a minor (10 p.c. to 20 p.c.) component is fuel fabrication.

For a few more years the major atomic energy activity in Canada is likely to be uranium mining and refining for export in support of military uses. A major transition, however, is taking place in which uranium production will give place to engineering and construction of nuclear electric generating stations. This phase will last until nuclear plants are established in such numbers and capacity throughout the world that the market for uranium revives and overtakes its former peak. There is some prospect that the economic advantages of the heavy-water reactors designed in Canada will lead to the adoption of this type in many other countries with the creation of a market for heavy water that could be produced competitively in Canada. The possible export of nuclear generating stations, heavy water, and uranium fuel is appearing as a new near-term prospect on a small but significant scale.

In Canada plans are already taking account of a revolutionary increase in the size of electricity-generating stations. The full-scale 200,000-kw. reactor at present under construction has come to seem small. Steam turbines and conventional stations are now appearing in larger capacities and the prospects of long-distance high-voltage transmission to interconnect centres of load, together with the lower unit power costs that result from operating on a larger scale, cause utilities to plan large generating stations of 2,000,000 kw.

* Prepared by Dr. W. B. Lewis, Vice-President, Research and Development, Atomic Energy of Canada Limited, Chalk River, Ont.

and more. The Canadian design of nuclear power reactor appears capable of expansion to keep pace, and will yield even more benefit than the conventional plant in the resulting reduction of unit power cost.

It is also significant that since lower unit power costs result from larger stations there is a new incentive for large utilities to export power from their systems and Canadian policy is changing to allow such export from Canada. Since the planning and construction of major power plants takes many years, these trends are not expected to be extensively realized before the 1970's. However, the prospect has already had its effect on atomic energy research and development.

Three Federal Government organizations have the basic responsibilities for atomic energy in Canada:—

- (1) The Atomic Energy Control Board, responsible for all regulatory matters concerning work in the nuclear field.
- (2) Eldorado Mining and Refining Limited, with a double function as a producer of uranium and as the Government's agent for the purchase of uranium from private mining companies.
- (3) Atomic Energy of Canada Limited, concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt-60 Beam Therapy units for the treatment of cancer.

The Atomic Energy Control Board does not itself conduct research, but it gives substantial grants to universities to further independent studies and to provide the equipment without which the universities would find it difficult to train the nuclear research workers of tomorrow. In the 1961-62 financial year its grants totalled \$700,000.

Eldorado operates research and development laboratories in Ottawa and uses them to support its uranium mining and processing at Beaverlodge in northern Saskatchewan and its refining plant at Port Hope, Ont. Eldorado co-operates with the Department of Mines and Technical Surveys, which carries out background research on the production and use of uranium, and with the Canadian Uranium Research Foundation, an organization which is supported by the industry and which is particularly interested in developing the non-nuclear uses of this metal.

Atomic Energy of Canada Limited (AECL) has an eleven-man Board of Directors, including individuals from private industry, public and private power companies and the universities. The Company's major plant is near Chalk River, Ont., and its Head Office and Commercial Products Division in Ottawa. A new research centre is under construction at Whiteshell, Man. The Nuclear Power Plant Division in Toronto directs the engineering of power reactors and nuclear generating stations. The first project was NPD, a nuclear power demonstration plant to produce 20,000 kw. of electricity, now in operation at Rolph-ton near the Chalk River establishment; its design and construction were carried out in collaboration with the Canadian General Electric Company Limited and The Hydro Electric Power Commission of Ontario. The Nuclear Power Plant Division of AECL, with the assistance of Ontario Hydro, is also designing and constructing a full-scale nuclear power plant, known as CANDU, which will supply 200,000 kw. of electricity to the Ontario Hydro system. This plant is being built at Douglas Point near Kincardine on Lake Huron. By agreement, Ontario Hydro will purchase the plant when it is in satisfactory operation. An Advisory Committee on Atomic Power Development keeps all other utilities fully informed of the progress being made. This Committee, which was set up by the Federal Government in 1954, meets periodically at Chalk River to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. For example, the Canadian General Electric Company is under contract to design and construct WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment. AMF Atomics Division of

AMF Canada Limited and CGE are AECL's chief contractors for fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Shawinigan Engineering, Orenda Engines Division of Hawker Siddley Canada Limited, Canadian Westinghouse Company Limited, Montreal Locomotive Works Limited and Montreal Engineering Company Limited. In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the time arrives, leaving AECL free for fundamental studies and developing new reactor concepts. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

In the international field, close ties are kept with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. There is an agreement with the United States for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the USAEC to spend \$5,000,000 in the United States on research and development related to reactors of Canadian design. Collaboration has also been established with the International Atomic Energy Agency, the Organization for Economic Co-operation and Development, and Euratom, as well as with Australia, Japan, Pakistan, Sweden, Switzerland, West Germany and, less formally, with Denmark, France, India and Norway. In India, a major experimental reactor—the Canada-India Reactor—similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961.

Chalk River Nuclear Laboratories.—At this research and development establishment basic and applied research is carried on by about 200 professional scientists and engineers supported by 300 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, radiation chemistry, environmental radioactivity, physics of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, the tandem Van de Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, electron microscopes, multi-channel pulse analysers, automatic recorders, and analogue and digital electronic computers.

Basic research is carried on in many fields, especially that of the structure of atomic nuclei, and of the interactions of neutrons, not only with individual nuclei but also with liquids and crystalline solids, particularly those involving energy transfer. For nuclear structure studies, the tandem Van de Graaff has made pioneer work possible by providing multiply-charged ions of precisely known energy and direction. It has proved possible to produce nuclei in specific energy states by different routes and to identify and analyse the states, thereby deducing the spin and other characteristics and discovering, for example, a correlated series of rotational states in the nucleus neon-20. Not only is this important to a basic understanding of nuclear structure, but it also finds application in unravelling the complex of nuclear reactions responsible for the genesis of nuclei in the interior of stars.

Studies of neutron interactions with matter are made possible by the intense beams of neutrons available from the NRU reactor. By monitoring the neutrons in cosmic radiation it has been possible to find correlations with the occurrence of solar flares and contribute to the recent advances of knowledge of phenomena in interplanetary space. Isotope techniques have brought about revisions in the basic theory of chemical reactions induced by radiation. This basic research may find a useful early application in the technology of using an organic liquid as coolant in nuclear power reactors.

Since extracted plutonium is no longer required, the fuel in the NRX reactor has been changed from natural uranium metal to a combination of natural uranium oxide and a uranium-235 aluminum alloy. The available neutron flux has been increased thereby while keeping the power at 42 megawatts. It is planned to revise the fuelling of NRU similarly at the end of 1963.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR APPROVED FOR CONSTRUCTION

Name	Location	Date of Start-up	Power	Fuel	Moderator	Coolant	Use
Zero Energy Experimental Pile (ZEPP).....	Chalk River, Ont.	1945	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
National Research Experimental (NRX).....	Chalk River, Ont.	1947	42, 000 kw.	Natural uranium oxide and enriched uranium alloy	Heavy water	Ordinary water	Research and isotope production
National Research Universal (NRU).....	Chalk River, Ont.	1957	200, 000 kw.	Natural uranium metal	Heavy water	Heavy water	Research and plutonium and isotope production
Pool Test Reactor (PTR).....	Chalk River, Ont.	1957	100 w.	Enriched uranium alloy	Ordinary water	Ordinary water	Reactivity and absorption measurements
Toronto University Sub-critical Reactor.....	Toronto, Ont.	1958	—	Natural uranium metal	Heavy water	—	Research and teaching
McMaster Nuclear Reactor (MNR).....	Hamilton, Ont.	1959	1, 000 kw.	Enriched uranium metal	Ordinary water	Ordinary water	Research
ZED-2.....	Chalk River, Ont.	1960	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
Canada-India Reactor (CIR).....	Bombay, India	1960	40, 000 kw.	Natural uranium metal	Heavy water	Ordinary water	Research and isotope production
Nuclear Power Demonstration (NPD).....	Rapla, Ont.	1962	20, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power demonstration
Canadian Deuterium-Uranium (CANDU).....	Douglas Point, Ont.	1964-65	200, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power

The research facilities of the NRX and NRU reactors have continued to attract individual scientists as well as teams from other countries. A team of Brookhaven (U.S.A.) and AECL scientists is using a neutron beam with a high-speed chopper and long flight path for nuclear interaction studies. Another team with scientists from Harwell (Br.) and other countries is using another system of choppers for studying details of the slowing-down of neutrons by moderators. Both in NRX and NRU the exceptional facilities for irradiations in high temperature water, steam and organic liquids have brought teams from Britain and the United States and individuals from West Germany and Sweden to conduct tests important for the design of future power reactors.

Nuclear Power Prospect.—The generation of electricity by nuclear power on a competitive economic basis is expected to be established by the type of reactor now under construction by the Nuclear Power Plant Division of AECL. This promise rests on the attainment of very-low-cost fuelling by an extremely simple system that has proved satisfactory in the Nuclear Power Demonstration Station reactor where there has been no fuel failure in the first year of operation. The fuel is uranium dioxide specially prepared from natural uranium entirely in Canada. A wide range of tests in hot channels in the NRX and NRU reactors at heat ratings and energy yields in excess of those required has established that this oxide fuel is incomparably more dependable than the uranium metal fuel for which the NRX and NRU reactors were designed. No provision for reprocessing the irradiated fuel is involved, for, by careful attention in the reactor design to minimizing any waste of neutrons, an energy yield of over 9,000 thermal megawatt-days is expected from a ton of uranium before it is discarded. This results in a prospective fuelling cost of about one mill (0.1 cent) per electric kilowatt-hour, to be compared with about three mills from coal at \$8 per short ton.

Canada has access to such an abundance of coal, oil and natural gas that the competitive cost level for electric power is lower than in many other countries. Nuclear power plants of the types now under construction in Britain and the United States have been assessed as unable to reach a low enough cost level, at least until several successive plants have been built and operated to discover where economies are possible. Plants of the CANDU type do not promise to be significantly cheaper in total initial outlay, but the fuelling cost can be so much less that meeting the competitive target is a very real prospect.

The low fuelling cost derives as much from the details of the design proposed as from the general type of reactor chosen. Some of the important features seem worthy of mention. The full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 33.3 p.c., so the reactor has to supply 660 thermal megawatts to the steam-raising plant. The reactor is essentially a tank of heavy water, 20 feet in diameter and 16.5 feet long, lying horizontally. It is penetrated by 306 fuel channels parallel to the axis on a 9-inch-square lattice. Each channel is a zirconium-alloy pressure tube of 3.25 in. inside diameter and about 0.16 in. thick. The fuel consists of bundles of 19 rods, 0.6 in. in diameter and 19.5 in. long, made of dense uranium dioxide in thin zirconium-alloy tubes. Heat is taken from the fuel directly by heavy water that passes at 560°F to the steam boiler, where normal water is raised to saturated steam at 483°F and 38 atmospheres. The heat developed in the heavy water moderator that is in the tank outside the fuel channels is not directly used and amounts to about 35 thermal megawatts. The over-all net plant efficiency is then 29.1 p.c. These details show that the design represents a very considerable advance over that originally conceived in 1956, and the improvement bears promise that continued progress will lead to costs well below the economic target. As examples of the advance, it may be noted that, for the same electric power output, the reactor power has been brought down from 790 to 700 megawatts and the length of fuel rod from 86 to 30 kilometres. The prospective fuelling cost has dropped from 1.85 mill/kwh. to 1.0 mill/kwh. On the other hand, no over-all reduction has been achieved in the capital cost estimates which remain in the range of \$300 to \$400 per electrical kilowatt for the whole plant. No reduction is expected until manufacturing experience has been gained that can be used in future construction, but thereafter appreciable reductions should be possible. A detailed breakdown of costs for CANDU was published during 1960. The conclusions are summarized in the following statement.

POWER COST ESTIMATES FOR CANDU
(mills/kwh.)

Item	First Unit 800 MW(e)	Twin Unit 400 MW(e)	2nd Unit Increment 800 MW(e)
Fixed charges.....	3.9 to 4.9	3.3 to 4.4	2.7 to 3.8
Fuelling.....	1.1 " 1.1	1.1 " 1.1	1.1 " 1.1
Operating.....	1.0 " 1.0	0.7 " 0.7	0.4 " 0.4
TOTALS.....	6.0 to 7.0	5.1 to 6.2	4.2 to 5.3

These figures will serve to explain why the first plants seem to find economic application in Canada only in the Ontario system, where annual charges on capital are low and coal has to be imported and costs about \$8 a short ton. Moreover, the demand for electricity in Ontario is growing at more than 200 megawatts capacity per year. To build reactors for lower powers saves little in the cost, so the cost per kilowatt rises and becomes uneconomical. Now that confidence has been gained from the early plants, higher powers seem possible and designs up to 750 electrical megawatts from one reactor are being studied.

Operating experience with the NRX and NRU reactors at Chalk River and with the many other types throughout the world has served to emphasize the great difficulty and costliness of making even minor operating repairs in the presence of the extremely high levels of radiation that are encountered around reactors. Directly and indirectly, this is responsible for the current hesitation to construct a number of large plants that for economic power cost no less than \$40,000,000 or \$50,000,000 each. With every new design it is necessary to acquire operating experience before the reliability and availability can be effectively estimated. Experience with defective fuel has been deliberately sought at Chalk River, because this is one of the difficulties most likely to be encountered. Appropriate techniques of locating the defective element, removing it and cleaning up the released radioactive fission products have been established and practised; at the same time fuel designs and ratings which lead to least difficulty in these operations have been studied. Experience of mechanical failures of control rods has lent weight to reactor designs such as NPD where control rods are not needed. Temperature changes are likely to provoke mechanical failures, so design is aimed at keeping the reactor at power for all essential operations including refuelling and complete maintenance testing and readjustment of instruments and working parts of the control system.

A study is in progress of the relative merits of four types of large power reactor for which development work is active. All are heavy-water-moderated and would not require any reprocessing of spent fuel. The fuel could be natural uranium or slightly enriched in the form of uranium dioxide or uranium carbide. The differences lie in the coolant and steam cycle. The four coolants are pressurized (perhaps partly boiling) heavy water (as in CANDU), fog or wet steam, ordinary boiling water, and an organic liquid. The fog and boiling water reactors would pass steam directly to the turbine; the heavy water and organic liquid would raise steam via a heat exchanger. It is apparent that in large sizes construction costs would be comparable but the small differences may be significant. A larger difference is in prospect from fuel fabrication costs. The cost of development of each type although high may be justifiable economically by the cost savings in appropriate circumstances. All appear competitive with conventional plants except locally where fuel is abundant at low cost.

Section 3.—Space Research in Canada*

The most important event in Canadian space research during 1962 was the launching of the satellite 1962 Beta Alpha (*Alouette*). This satellite was designed and built in Canada and launched into orbit by the United States National Aeronautics and Space Administration on Sept. 29. The satellite carried a number of scientific experiments, but its main objective was the sounding of the ionosphere from above. The ionosphere is a diffuse layer of highly conducting gas lying between heights of about 60 to 300 miles.

* Prepared (March 1963) by Dr. D. C. Rose of the National Research Council, Ottawa.

It reflects radio waves over a wide band of frequencies and has a great practical importance in communications. The underside of the ionosphere has been studied for many years by the technique of sending a short pulse of radio wave up from the ground and measuring the time delay when the reflected pulse is received and the band of frequencies that are reflected. From the results of such studies the diurnal, seasonal and storm effects in the ionosphere are well known and this knowledge is of considerable value in making the maximum use of radio communication channels. However, the satellite *Alouette* was the first attempt to get a continuous sounding of the ionosphere from above. The satellite travels in a nearly circular orbit at about 600 miles above the earth's surface and, on command, will transmit radio pulses of varying frequency to the ionosphere and observe the reflected pulse from the top side of the ionosphere. This type of measurement is often referred to as the topside sounder.

Other experiments carried by the satellite include experiments on radio frequency waves from the sky and very low frequency electromagnetic waves whose propagation is influenced by the earth's magnetic field. Also included are a number of detectors to study cosmic rays, energetic particles in the Van Allen radiation belt and the artificial radiation belts introduced by high altitude nuclear explosions.

The over-all design of the satellite was carried out by the Defence Research Telecommunications Establishment. Some components were developed by Canadian industry and the cosmic ray instruments were the responsibility of the National Research Council. The cost of the launching vehicles, the actual launching and data recovery were undertaken by the United States (NASA) as part of its international co-operation program.

Data are transmitted from the satellite to ground stations. Stations in several countries are receiving them and sending the magnetic tape records to Ottawa for analysis. Most of the ground stations are part of the United States *Minitrack* satellite-tracking organization but three data-recovery stations were built in Canada specifically for *Alouette* and future ionosphere monitoring satellites. These are at Ottawa, Ont., Prince Albert, Sask., and Resolute, N.W.T. The orbit of *Alouette* is almost in a north-south direction, the plane of the orbit being tilted only 10° from the earth's axis.

The satellite, though a striking space experiment, did not represent all of Canadian space activities during 1962. There is an important region of the upper atmosphere that is too low for practical satellite orbits and too high to be reached by balloons or aircraft—the region between heights of about 25 miles and 200 miles. This region is interesting in that it contains the absorbing layer in the lower ionosphere that causes radio blackouts and also includes the lower limit of aurora. While radio propagation through the regions tells a great deal about density of electrons, it gives little information on the chemical constitution of that very tenuous part of the upper atmosphere, or its state of ionization, or about the nature of the radiation or high energy particles that cause the ionosphere. And it is of particular importance to Canadian scientists to study the upper atmosphere at these levels in Northern Canada because the axis of the geomagnetic field is tilted toward Northern Canada and the production of the aurora and ionosphere disturbances that cause radio blackouts is closely associated with magnetic disturbances in polar regions.

To study these, direct measurements are necessary; that is, instruments must be carried up to the regions where the measurements are required and a practical way of doing this is to use rockets that are much smaller and cheaper than those needed for launching satellites. This technique, of course, preceded the launching of satellites and is still of great importance. A series of rockets (*Black Brant*) is being developed in Canada: *Black Brant I*, an experimental rocket, is now obsolete; *Black Brant II* is a 17-inch diameter rocket capable of carrying 150 lb. of payload to over 100 miles; *Black Brant III* is a smaller rocket 10 inches in diameter and has a design capability of carrying 40 lb. to 100 miles; *Black Brant IV* is a tandem combination of *II* and *III*; and *Black Brant V* is an optimum design of *Black Brant II*. *Black Brant II* is being used extensively for scientific measurements and *Black Brant III* and *IV* will be ready during 1963. These rockets were developed for scientific purposes by Canadian industry with some government support.

Another method is to shoot a projectile containing the instruments out of a smooth-bore gun, a method being tried by a group in the Engineering Faculty of McGill University with considerable support from the United States Defence Department. An old 16-inch gun has been adapted for this purpose and mounted at a site in Barbados. This is an interesting experiment but the shock of firing the gun introduces problems in design of the instruments being carried.

Space research activities are carried out by several Canadian universities as well as in government laboratories. In fact, upper atmosphere research is a field in which some university research workers have long been active. The National Research Council gives grants to university research workers in space research and, for advice in this field, the Council has formed an Associate Committee on Space Research whose membership includes representation from universities, government laboratories and government departments holding operating responsibilities relating to space technology. Because university space research experiments are usually carried out with the upper atmosphere sounding rockets of the *Black Brant* series, part of the Council's assistance is in supplying the rockets and co-ordinating arrangements for their launching at the Fort Churchill, Man., rocket-launching facility.

Another function of the NRC interest in space research is that of holding membership in the International Council of Scientific Unions' Special Committee on Space Research (COSPAR). This Committee consists of members representing ten international scientific unions and representatives of the National Academies or National Research Councils of countries that are active in space research. This Committee, though non-government in its organization (it represents academic and scientific interests not normally under the direct control of the governments of the countries concerned), has had considerable success in organizing international symposia on space science and has had a great influence in supporting international co-operation. This has been recognized in many references to COSPAR in the Proceedings of the United Nations Committee on the Peaceful Uses of Outer Space.

In addition to the scientific research activities, the construction of a satellite and the development of a series of sounding rockets, Canadian Government departments are taking part in many applications of space technology that affect their normal responsibilities. The first to come into common use are satellite applications to meteorology and communications. Meteorological satellites already have had a considerable influence in advancing the understanding of the world-wide weather pattern. The spread of Canadian territory across the northern hemisphere is such that a data read-out station in Eastern Canada will expand the coverage of transmission from meteorological satellites, particularly in closing the gap between ground stations in North America and Europe. The problem has been studied by the Meteorological Branch of the Department of Transport and an inter-government agreement has been reached for the building of a meteorological satellite data recovery station on Cape Breton Island.

In communications, the use of satellites has already been shown to have an extensive practical future in expanding the now overcrowded communication channels. The Telecommunications and Electronics Branch of the Department of Transport has the major responsibility in this field and an experimental ground station is being planned in co-operation with the United States.

In the organization of space research and practical application, Canada has not yet followed the United States plan of centring all non-military applications in one government organization. Canadian activities are considerable, however, and various groups in government and industry are taking advantage of developments in space research and technology to be consistent with their responsibilities and to meet the needs of Canadian industrial development.

Section 4.—Other Scientific and Industrial Research Facilities

Aside from the research facilities and activities covered in Sections 1, 2 and 3, Canadian research is carried on by various federal agencies, provincial organizations, universities and industries. Several provinces in Canada have established provincial Research Councils to stimulate and support research on problems having special provincial significance. The universities, of course, form an extremely important part of the Canadian pattern of research. Much of their work is along fundamental lines but practical problems are not neglected, especially those of regional interest.

All three types of institutions—federal, provincial and university organizations—have an interest in problems of industrial significance; this is part of the current Canadian pattern of research. Though many Canadian industries now possess research facilities—some of them quite extensive—the major part of industrial research to date has been done under government auspices.

Thus the unique problems of the country, particularly its large area coupled with a small population, have led to a typically Canadian organization of research, of which a very strong associate committee system is perhaps the most distinctive feature.

Subsection 1.—Federal Organizations

Although research by industrial firms has been slow to develop in Canada, government research has expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's export trade, and later because of increasing interest in the processing of raw materials, the necessity of meeting the needs of national defence and the developing consideration for many human and resource requirements. Federal agencies involved in research include the Departments of Agriculture, Forestry, Fisheries, Mines and Technical Surveys, National Defence, National Health and Welfare, and Northern Affairs and National Resources as well as the National Research Council and other Crown corporations such as Atomic Energy of Canada Limited. A system of committees, with nation-wide representation, eliminates unnecessary duplication of work from these national research organizations.

The scientific work of the Department of Agriculture is described in Chapter IX of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XIX, the specialized work in scientific forest research in Chapter X, scientific services concerned with Canada's mineral resources conducted by the Department of Mines and Technical Surveys in Chapter XI, investigational work of the Department of Fisheries in Chapter XIII, research of the Canadian Wildlife Service of the Department of Northern Affairs and National Resources in Chapter I, health and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, work of the Defence Research Board in Chapter XXV, the work of the National Research Council at pp. 361-368 and atomic research at pp. 368-373.

Subsection 2.—Provincial Organizations

The fact that only a few provincial research organizations exist does not indicate lack of interest in research by the provinces. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Nova Scotia Research Foundation.—This body was created by the Government of Nova Scotia in 1946 to give its people scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. It assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, laboratory and summer assistants, library, cartographic, photogrammetric and translation services, and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibiotics, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution, and seaweed surveys as well as forest aphid, forest ecology and genetic studies and has assisted studies on the nutrient cycles of lakes, on X-ray crystallography, and on pressures in underground strata. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations. The Technical Services Division provides free technical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry and engineering, including operational engineering.

Saskatchewan Research Council.—The Saskatchewan Research Council carries out research in the physical sciences, both pure and applied, with the aim of improving the provincial economy. The Council is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. Current emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. Besides being actively engaged in its own projects, the Council, by the granting of funds, supports further research at the University of Saskatchewan. Its buildings, occupied by a permanent staff of about 45 persons and additional temporary staff, are situated on the university campus.

Research Council of Alberta.—The Province of Alberta set up a Scientific and Industrial Research Council in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that which set up the National Research Council and is financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province. Investigations in the Council laboratories and pilot plant are organized into two branches—the Earth Sciences Branch which includes all work on groundwater geology, geological surveys and research, and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, and gasoline and oil testing. There are, in addition, project groups dealing with industrial engineering services, highway research, a co-operative program on cloud physics with reference to the hail problem, and a number of special projects.

The operations of the organization are controlled by a Council of ten individuals representative of the government, the university and industry. The various research projects are under the immediate supervision of advisory committees and the Technical Advisory Committee of the Council; the latter is composed of senior officers of the Council and the government, with certain committee chairmen and university representatives.

The Council laboratories are located beside the University of Alberta campus.

British Columbia Research Council.—The British Columbia Research Council, under the sponsorship of the provincial Department of Industrial Development, Trade, and Commerce, provides a scientific and engineering staff with laboratories on the campus of the University of British Columbia. The objective is to enable even the smallest firms

to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific and technical knowledge. The Council provides three classes of service: a free information service in collaboration with the National Research Council; assistance to specific firms at cost where information cannot be supplied from existing knowledge; and, at the Council's expense, research on problems of general value to the industrial development of the province.

The Ontario Research Foundation.—The Ontario Research Foundation, established in 1928, operates as an independent corporation, deriving its powers from a special Act of the Legislature and governed by a Board of Governors appointed by the Lieutenant-Governor in Council of Ontario. The organization was financed initially by an endowment fund composed of subscriptions from commercial and industrial corporations, from private individuals, and a grant from the provincial government. However, most of its current income is derived from contract research undertaken for industry, although income is also obtained from the various government departments for research and other work undertaken on a contract basis. The Foundation is concerned primarily with the development of industry and the development of Ontario's natural resources through the application of scientific research. However, Foundation activities are not confined to the province; research contracts are routinely handled for any organization, without reference to location. Being primarily an industrial research institution, the Foundation's main areas of scientific endeavour are chemistry, physics, metallurgy, biochemistry, textiles and engineering. Other Foundation departments, such as parasitology and physiography, are engaged particularly in studies related to Ontario's natural resources. A field engineering and technical information service is provided free to industry, sponsored by the Ontario Department of Economics and Development and by the National Research Council.

The Hydro-Electric Power Commission of Ontario.—The Research Division of Ontario Hydro, with a staff of 300, provides services for all technical activities of the utility, in engineering design, construction work, power utilization, and system operation and maintenance. In addition to solving specific problems, the testing, investigation and research work leads to important technical advances, including the development of new and better equipment. Ontario Hydro is thus enabled both to improve the performance of the power system and to effect economies. Members of the staff maintain close contact with research organizations and other power utilities, and participate in the committee work of major technical societies and of standards associations.

Electrical investigations explore methods of generating, transmitting, controlling, distributing and utilizing power, and seek improvement in equipment for these purposes. Some of the main fields of study are transmission at extra-high voltage; electrical insulation; system operation and control, and system protection against lightning; communications and telemetering; illumination; and power metering. Attention is given to the performance and efficiency of power equipment, to improved measuring techniques, and to means of minimizing the hazards of electric shock.

Structural and mechanical studies include the following: soil mechanics as related to foundations, roads, and earth dams and dykes; the physical properties of structural components and of numerous items such as conductor joints and line hardware; the mechanical performance and safety features of equipment and various types of machines; metals and metallurgy; welding materials, techniques and applications; atmospheric and underground corrosion of metals; stresses in materials and structures; noise and vibration conditions; and a variety of problems associated with the design, construction and maintenance of concrete structures, the application of masonry materials, and the production, placement and quality control of all concrete used.

In addition to chemical analyses and tests performed on a wide range of materials and products purchased, chemical research work is conducted with regard to such subjects as wood preservation, plastics applications, protective coatings, both vegetation and insect pest control, lubrication, liquid and gaseous electrical insulants, thermal insulation, air

pollution, corrosion prevention, and water treatment. Other studies contributory and supplementary to the main branches of work are carried on in the fields of physics, biology, petrology, statistics and mathematics. Operations research studies are used in determining optimum policies and procedures in vehicle replacement, inventory control, reserve transformer capacity, economic power dispatch of hydro-thermal systems, and time-series forecasting of power demands and lake levels.

Subsection 3.—University Research

For many years research in the universities was directed toward obtaining knowledge for its own sake and was considered pure research. Later it was recognized that the conclusions of such research provided the basic information for applied science and before long the universities, because of their unique position in having trained specialists and equipment, were involved in both basic and applied research. During World War II they were encouraged to undertake emergency and other contractual research and since then the trend toward broadening the field of research, increasing the capacity of universities to educate advanced students, and procuring large-scale costly equipment has shown rapid advance. This has created new problems but has provided even greater opportunities for undertaking sizable projects which could not have been attempted otherwise, and has thereby tended to knit the university into the very warp of industry.

Research conducted in the universities falls into three broad categories: projects undertaken by the student under the guidance of a professor or committee to meet requirements for an advanced degree; research undertaken by the professor, which may be of a more or less continuous nature; and larger research projects undertaken co-operatively on a faculty or inter-faculty basis in university laboratories or in such specialized institutions connected with the university as medical research laboratories, institutes of microbiology and hygiene, science service laboratories and faculties of agriculture.

At the turn of the century only two universities in Canada were offering graduate work (Toronto and McGill) and few students proceeded to advanced studies. Growth was slow and uneven until after the Second World War, but then accelerated sharply. By 1960 there were 14 schools of graduate studies and at least ten other universities, some rather large, carrying on graduate work in one or more fields. Most of the graduate schools register several hundred students and the rate of increase in enrolment in these schools in recent years has been greater than that at the undergraduate level.

Not only is there a continuing increase in the number of graduate students and staff members engaged in research at universities, but both the scope and magnitude of current projects are vastly different from those undertaken during the early years of the century. At that time many of the experiments could be carried out with equipment such as glass tubing and dry cell batteries but now universities require for some of their research projects equipment costing hundreds or thousands of dollars, such as electron microscopes, mass spectrometers, cyclotrons, cobalt bombs, and electronic computers. The total range of individual or group projects is encyclopaedic. A few of the exciting new developments include: high altitude research (one project involves the projection of test materials and instrumentation 600,000 feet into space), an intensive study of ocean depths, further investigation into the cause and cure of cancer, and the unfolding of Canada's past through historical and archaeological research.

This increasing volume and cost of research places a heavy strain on the universities. The amount and kinds of research are limited by the availability of trained research specialists, the difficulty of providing adequate space and equipment, and the problem of securing necessary financial backing. Just under 15 p.c. of the total income of universities is spent on research, and the dollar value of research undertakings has increased from \$5,000,000 in 1952-53 to \$14,000,000 in 1959-60.

Outside financial support comes primarily from four sources: agencies and departments of the Federal Government, provincial government departments, industry and private foundations. The contributions from these sources, of course, vary widely from university to university, but for all Canadian institutions the approximate division of contributions to research at the present time is as follows:—

	p.c.
Federal Government departments.....	22
National Research Council.....	22
Defence Research Board.....	13
Provincial government departments.....	13
Universities.....	9
Industry.....	7
Other (including private foundations).....	14

Subsection 4.—Industrial Research

Industrial research in Canada is changing very rapidly. In the past, industry in general was largely unaware of the value of research to its own development and to that of the country, partly because many Canadian companies were subsidiaries of companies in Britain and the United States and partly because small companies found it impossible to finance their own research. The problem was accentuated by the vast size of the country, the absence of concentration of similar industries and the proximity to the relatively large research facilities of the United States.

However, the emergence of Canada as a highly industrialized society, its entrance into multitudinous fields of production, the rapid growth of many large nation-wide industries, the serving of a discriminating domestic market and the meeting of competition from abroad have had the effect of making Canadian manufacturing establishments research conscious and many of the larger ones now possess competent research organizations.

The latest DBS survey of expenditures on industrial research in Canada was conducted during the first half of 1960 and provided figures for the calendar year 1959 and estimates for the year 1960. These are summarized in the 1962 Year Book at pp. 346-350 and may be found in detail in DBS publication *Industrial Research-Development Expenditures in Canada, 1959* (Catalogue No. 13-516).

Section 5.—Federal Government Expenditures on Scientific Activities

Two surveys of expenditure of the Federal Government on scientific activities have been carried out by the DBS. The first survey requested information based on final expenditure for the year ended Mar. 31, 1959 and for expected expenditure based on departmental estimates for the year ended Mar. 31, 1960; the second survey requested similar information for the years ended Mar. 31, 1961 and 1962.

For the purposes of these surveys, scientific activities include all activities in the natural sciences concerned with the creation of new knowledge, new applications of knowledge to useful purposes or the furtherance of both the creation of knowledge and new applications. Included in scientific activities are scientific-research development, capital expenditures for research plant and equipment, scientific data collection, scientific information, and scholarship and fellowship programs.

The year ended Mar. 31, 1960 was one of readjustment in government scientific research, following a major change in Canada's aircraft development program, and expenditure dropped from \$222,600,000 in the previous year to \$212,300,000, or by 4.6 p.c.

However, research activity increased in 1960-61 and expenditure reached \$228,800,000, an increase of 7.8 p.c., and the budgeted outlay for 1961-62 was reported at \$258,900,000, a further increase of 13.2 p.c.

4.—Summary Statistics of Federal Expenditures on Scientific Activities, Years Ended Mar. 31, 1959-62

NOTE.—Data for the years ended Mar. 31, 1959 and 1961 are actual expenditures and those for the years ended Mar. 31, 1960 and 1962 are based on the annual departmental estimates presented to Parliament and are therefore subject to reduction as a result of postponements, cancellations or other changes of program plans.

(Millions of dollars)

Activity and Department or Agency	1958-59	1959-60	1960-61	1961-62
Conduct of research-development, including planning and administering research-development and grants-in-aid of research.....	168.4	151.8	171.9	192.7
Capital expenditures on research-development plant.....	30.7	33.0	34.2	37.0
Scientific data collection.....	18.1	20.6	15.7	21.1
Scientific information.....	4.1	4.9	5.0	5.6
Scholarship and Fellowship programs.....	1.3	2.0	2.0	2.5
Totals, Scientific Activities.....	222.6	212.3	228.8	258.9
Department or Agency—				
Agriculture.....	27.2	31.1	28.4	31.7
Atomic Energy.....	27.9	32.8	39.9	40.7
Mines and Technical Surveys.....	27.1	27.7	29.5	39.9
National Research Council.....	27.2	32.8	36.6	40.1
National Defence.....	66.2	34.0	31.0	32.1
Defence Research Board.....	29.3	30.6	31.9	34.7
Other departments.....	17.7	23.3	31.5	39.7
Totals, All Departments or Agencies.....	222.6	212.3	228.8	258.9

The six departments or agencies listed in Table 4 continue to account for a large part of all scientific activity in the Federal Government, although the 85 p.c. accounted for by these agencies in 1961-62 was a decrease from the 92 p.c. for which they accounted in 1958-59; the drop indicates growth in scientific activities in departments less active in past years. In the period under review, Atomic Energy of Canada Limited, the Department of Mines and Technical Surveys and the National Research Council each increased expenditures by close to 50 p.c., the Department of Agriculture by 17 p.c., and the Defence Research Board by 18 p.c. Expenditures by the Department of National Defence dropped by 52 p.c.

Approximately three quarters of Federal Government funds for scientific activity is directed to the conduct of research-development and, of that expenditure in 1961-62, 80.1 p.c. was performed within government facilities and the remainder was contracted to private organizations or used in universities as grants-in-aid of research. The fact that only 66 p.c. was performed within government facilities in 1958-59 indicates that the importance of private research-development work for the Federal Government has declined recently.

Expenditures on scientific activities by the civilian branches of government (excluding the Armed Forces and the Defence Research Board) rose from \$127,000,000 in 1958-59 to \$192,100,000 in 1961-62, an increase of 51.3 p.c. Over the same period, expenditures by the Armed Forces and the Defence Research Board dropped from \$95,600,000 to \$66,800,000. In 1961-62, the civilian branches of government accounted for 74.2 p.c. of all research-development expenditures of Federal Government departments and agencies, compared with 72.5 p.c., 69.6 p.c. and 57.1 p.c., respectively, for the three previous fiscal years.

5.—Federal Expenditures on Scientific Activities by Civilian and Defence Branches of Government, Years Ended Mar. 31, 1959-62

NOTE.—See headnote to Table 4, p. 381.

(Millions of dollars)

Activity	Civilian Branches				Armed Forces and the Defence Research Board			
	1958-59	1959-60	1960-61	1961-62	1958-59	1959-60	1960-61	1961-62
Conduct of research-development, including planning and administering research-development and grants-in-aid of research	80.8	95.8	112.7	129.7	87.6	56.0	59.2	63.0
Capital expenditures on research-development plant.....	25.0	26.7	32.4	35.5	5.7	6.3	1.8	1.5
Scientific data collection.....	16.4	18.9	13.8	18.7	1.7	1.7	1.9	2.4
Scientific information.....	3.5	4.3	5.0	5.6	0.6	0.6	—	—
Scholarship and fellowship programs.....	1.3	2.0	2.0	2.5	—	—	—	—
Totals, Scientific Activities.....	127.0	147.7	165.9	192.1	95.6	64.6	62.9	66.8

Federal Government expenditures (exclusive of those by the Armed Forces and the Defence Research Board) on research-development are classified according to scientific field for the four fiscal years in Table 6. Such expenditures for the physical sciences have increased over this period at the rate of approximately \$10,000,000 each year. In the life sciences, expenditures have increased in proportion to total increase in expenditures on research-development.

6.—Federal Expenditures on Research-Development, by Scientific Field, Years Ended Mar. 31, 1959-62

NOTE.—See headnote to Table 4, p. 381.

(Millions of dollars)

Scientific Field	1958-59	1959-60	1960-61	1961-62
Physical Sciences—				
Engineering—				
Chemical.....	3.5	4.4	5.1	6.3
Civil.....	2.3	2.6	3.4	3.8
Electrical.....	4.8	5.9	7.4	8.9
Mechanical.....	8.1	9.6	12.1	13.7
Other.....	1.7	4.9	5.2	7.7
Totals, Engineering.....	20.4	27.4	33.2	40.4
Other Physical Sciences—				
Chemistry.....	6.4	7.3	8.6	9.8
Physics.....	7.0	8.2	7.6	9.1
Geology, geophysics and other earth sciences.....	4.1	4.3	9.4	11.2
Metallurgy.....	4.9	5.3	2.6	3.4
Mathematics.....	0.1	0.1	0.4	0.4
Other.....	2.6	2.8	2.1	2.6
Totals, Physical Sciences.....	45.5	55.4	63.9	76.9
Life Sciences—				
Medicine.....	4.5	5.9	8.1	8.8
Agriculture.....	23.0	25.4	26.0	27.7
Biology.....	7.8	9.1	13.2	15.0
Other.....	—	—	0.5	0.5
Totals, Life Sciences.....	35.3	40.4	47.8	52.0
Grand Totals.....	80.8	95.8	111.7	128.9

Details of federal expenditures on scientific activities for the fiscal years 1960-61 and 1961-62 are given in Table 7.

7.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1961 and 1962

NOTE.—Corresponding figures for the fiscal years ended Mar. 31, 1959 and 1960 are given in the 1961 Year Book, pp. 395-396; see headnote to Table 4, p. 381.

Department or Agency	1960-61				1961-62			
	Scientific Research-Development		Other Scientific Activities ²		Scientific Research-Development		Other Scientific Activities ²	
	Conduct of Research-Development ¹	Capital Expenditures on Research-Development Plant	Total	Total Funds Applied	Conduct of Research-Development ¹	Capital Expenditures on Research-Development Plant	Total	Total Funds Applied
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Agriculture	23,554	4,058	27,612	793	24,926	5,911	30,837	31,691
Administration Branch.....	—	—	—	401	—	—	—	442
Production and Marketing Branch— Health of Animals Division.....	422	26	448	14	593	895	1,488	1,500
Research Branch.....	23,132	4,032	27,164	378	24,333	5,016	29,349	29,749
Atomic Energy	23,706	16,120	39,826	42	30,406	10,198	40,604	40,654
Atomic Energy Control Board.....	650	—	650	—	700	—	700	700
Atomic Energy of Canada Limited.....	23,056	16,120	39,176	42	29,706	10,198	39,904	39,954
Board of Grain Commissioners—Grain Research Laboratory	130	84	214	196	165	49	214	435
Canadian Arsenals Limited.....	1,034	—	1,034	—	813	—	813	813
Central Mortgage and Housing Corporation.....	76	—	76	2	188	—	188	188
Defence Production	2,902	—	2,902	—	5,500	—	5,500	5,500
External Affairs.....	54	—	54	74	22	—	22	142
Fisheries (excl. Fisheries Research Board of Canada)	829	370	1,199	5	1,110	969	2,079	2,086
Conservation and Development Service.....	411	340	751	—	449	934	1,383	1,383
Inspection Service.....	6	—	6	11	7	—	7	14
Industrial Development Service.....	412	30	442	—	654	35	689	689
Fisheries Research Board of Canada	8,860	501	9,361	92	5,632	1,494	7,126	7,232
Forestry	8,289	341	8,630	—	9,563	748	10,311	10,311
Forest Entomology and Pathology Branch.....	4,142	330	4,472	—	4,708	530	5,238	5,238
Forest Research Branch.....	2,847	—	2,847	—	3,310	218	3,528	3,528
Forest Products Research Branch.....	1,300	11	1,311	—	1,545	—	1,545	1,545
Mines and Technical Surveys	10,725	4,999	15,724	13,795	11,988	9,517	21,505	29,875
Dominion Observatories Branch.....	2,446	—	2,446	—	2,797	—	2,797	2,797
Geographical Branch.....	406	7	413	64	454	11	465	578
Geological Survey of Canada Branch.....	2,900	270	3,170	1,730	3,364	366	3,730	6,100
Mines Branch.....	4,916	388	5,304	167	5,341	328	5,669	5,849

For footnotes, see end of table, p. 384.

7.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1961 and 1962—concluded

Department or Agency	1960-61					1961-62				
	Scientific Research-Development					Scientific Research-Development				
	Conduct of Research-Development ¹	Capital Expenditures on Research-Development Plant	Total	Other Scientific Activities ²	Total Funds Applied	Conduct of Research-Development	Capital Expenditures on Research-Development Plant	Total	Other Scientific Activities ²	Total Funds Applied
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Mines and Technical Surveys—concluded										
Polar Continental Shelf Project.....	57	155	212	1,236	1,448	32	202	234	1,574	1,808
Surveys and Mapping Branch.....	—	4,179	4,179	10,598	14,777	—	8,610	8,610	14,133	22,743
National Film Board.....	29	1	30	—	30	30	2	32	—	32
National Health and Welfare.....	4,813	232	5,045	456	5,501	5,057	201	5,318	524	5,842
National Research Council.....	28,344	5,083	33,427	3,148	36,575	30,896	5,271	36,167	3,933	40,100
Northern Affairs and National Resources.....	1,667	122	1,789	1,765	3,554	1,950	96	2,046	2,088	4,134
National Parks Branch.....	743	—	743	12	755	810	—	810	13	823
National Museum of Canada.....	120	—	120	240	360	163	—	163	326	489
Northern Co-ordination and Research Centre.....	39	—	39	39	78	52	—	52	—	52
Water Resources Branch.....	765	122	887	1,513	2,400	925	96	1,021	1,749	2,770
Post Office—Engineering and Development Branch.....	653	—	653	—	653	132	—	132	—	132
St. Lawrence Seaway Authority.....	20	—	20	—	20	—	—	—	—	—
Transport.....	660	525	1,185	436	1,621	918	1,025	1,943	554	2,497
All Services.....	385	140	525	324	849	477	300	777	359	1,136
Telecommunications and Electronics Branch.....	223	385	608	112	720	334	494	828	115	943
Marine Services.....	—	—	—	—	—	60	231	291	80	371
Shipbuilding Branch.....	52	—	52	—	52	47	—	47	—	47
Veterans Affairs.....	354	—	354	3	357	384	—	384	5	389
Totals (excl. National Defence and DRB)	112,699	32,436	145,135	20,807	165,942	129,680	35,541	165,221	20,832	192,053
National Defence (excl. Defence Research Board)	29,075	—	29,075	1,954	31,029	29,744	—	29,744	2,355	32,099
Defence Research Board.....	30,091	1,786	31,877	—	31,877	33,287	1,443	34,740	—	34,740
Totals, All Departments and Agencies...	171,865	34,222	206,087	22,761	228,848	192,721	36,984	229,705	29,187	258,892

¹ Includes planning and administering research-development and grants-in-aid of research.² Includes scientific data collection, scientific information and scholarship and fellowship programs.

CHAPTER VIII.—CRIME AND DELINQUENCY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages, and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect.

* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Prepared by the Criminal Law Section, Department of Justice, Ottawa.

101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciaries are given in Chapter II, pp. 77-79, and provincial judiciaries are dealt with briefly at pp. 79-80; more detailed information on provincial judiciaries is given in the 1954 Year Book, pp. 47-55.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbidge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Narcotic Control Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility, the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and dangerous sexual offenders partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. A short outline of the system that existed under the repealed Code together with the major revisions effected by the new Code is given in the 1955 Year Book, pp. 295-298.

Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to

* Salmond on *Jurisprudence*, 7th Edition, p. 496.

appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see pp. 406-408).

It is most important to notice that in 1960 (SC 1960, c. 44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1, which reads as follows:—

"1. It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,

- (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law;
- (b) the right of the individual to equality before the law and the protection of the law;
- (c) freedom of religion;
- (d) freedom of speech;
- (e) freedom of assembly and association; and
- (f) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the Criminal Code.

In 1961 (SC 1960-61, cc. 43-44) the offence of murder was divided into capital and non-capital. The death penalty was abolished in relation to the offence of non-capital murder. More detailed information on this classification is given in the 1962 Year Book, pp. 354-355. Also in 1961 the term *criminal sexual psychopath* was dropped and the term *dangerous sexual offender* substituted. More detailed information is available in the 1962 Year Book, p. 355.

Section 2.—Adult Offenders and Convictions

Offences may be classified under two headings, "indictable offences" and "offences punishable on summary conviction". Indictable offences are grouped in two main categories: (1) offences that violate the Criminal Code and (2) offences against federal statutes. These include the graver crimes. Offences punishable on summary conviction—those not expressly made indictable—include offences against the Criminal Code, provincial statutes and municipal by-laws. It is debatable how far some summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort, as, for example, parking violations or practising trades without licence but, on the other hand, summary conviction offences may include such serious charges as assault and contributing to juvenile delinquency.

The following Subsection 1 deals with adults convicted of indictable offences, Subsection 2 with young adult offenders convicted of indictable offences, Subsection 3 with convictions for summary conviction offences and Subsection 4 with appeals.

Subsection 1.—Adults Convicted of Indictable Offences

Statistics of indictable crimes are based on persons, one purpose being in order to evaluate the population engaged in prohibited activities and another to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, while individuals may be charged with more than one offence, only one offence is tabulated for each person. This offence is selected according to the following criteria: (1) if the person were tried on several charges, the offence selected is that for which proceedings were carried to the farthest stage—conviction and sentence; (2) if there were several convictions, the offence selected is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence selected is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another—for example, charged with murder and convicted of manslaughter—the offence selected is the one for which the person was convicted.

In 1961 there were 43,161 adults charged with 81,867 indictable offences, of whom 38,679 were found guilty of 71,262 offences. In the previous year there were 39,343 adults charged with 73,411 indictable offences, of whom 35,443 were found guilty of 64,707 offences.

1.—Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1960 and 1961

Province or Territory	Persons Convicted		Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1960	1961	1960	1961
	No.	No.	No.	No.
Newfoundland.....	469	703	180	274
Prince Edward Island.....	32	42	49	65
Nova Scotia.....	1,343	1,383	292	297
New Brunswick.....	888	1,038	243	290
Quebec.....	6,806	8,064	212	245
Ontario.....	13,482	13,985	331	339
Manitoba.....	2,050	2,368	345	391
Saskatchewan.....	1,463	1,743	250	293
Alberta.....	3,831	4,012	471	477
British Columbia.....	4,868	5,092	447	465
Yukon and Northwest Territories.....	211	249	981	1,103
Canada.....	35,443	38,679	307	330

Indictable offences are classified according to the main sources of the criminal law—the Criminal Code and federal statutes. Indictable offences under the Criminal Code are grouped into six classes as shown in Table 2. Class I covers offences against the person and in 1961 there were 5,234 males and 299 females convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering and robbery, serious crimes which involve acts of violence, are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1961 there were 315 men and 171 women convicted under federal statutes of whom 290 men and 170 women were offenders under the Narcotic Control Act.

2.—Persons Charged and Convicted of Indictable Offences, by Class of Offence, 1960 and 1961

Class of Offence	1960			1961			Increase or Decrease in Persons Convicted
	Persons Charged	Persons Convicted		Persons Charged	Persons Convicted		
		M.	F.		M.	F.	
Criminal Code	No.	No.	No.	No.	No.	No.	p.c.
Class I.—Offences against the Person	6,113	4,750	235	6,847	5,234	299	+11.1
Abduction and kidnapping.....	44	34	—	51	34	—	—
Assault, causing bodily harm, common, on police and obstruction....	4,220	3,375	175	4,586	3,581	191	+ 8.3
Offences against females ¹	930	687	26	1,017	757	38	+11.5
Causing death by criminal negligence, ² manslaughter and murder.	207	108	4	208	107	7	+ 1.8
Attempted murder, causing bodily harm and danger.....	178	104	11	215	129	14	+24.3
Duties tending to preservation of life.....	17	12	1	27	19	4	+76.9
Other offences against the person...	517	430	18	743	607	45	+45.5
Class II.—Offences against Property with Violence	8,267	7,537	105	8,485	7,731	132	+ 4.9
Breaking and entering a place, extortion and robbery.....	8,267	7,537	105	8,485	7,731	132	+ 2.9
Class III.—Offences against Property without Violence	19,933	16,610	1,701	21,748	17,741	2,101	+ 8.4
Fraud and false pretences.....	2,414	1,929	222	2,835	2,185	287	+14.9
Having in possession.....	1,974	1,657	68	2,255	1,837	77	+11.0
Theft.....	15,545	13,024	1,411	16,658	13,719	1,737	+ 7.1
Class IV.—Malicious Offences against Property	752	623	30	915	760	33	+21.4
Arson and other fires.....	98	75	8	115	80	11	+ 9.6
Other interference with property...	654	548	22	800	680	22	+23.2
Class V.—Forgery and Other Offences Relating to Currency	1,158	987	109	1,376	1,146	150	+18.2
Forgery and uttering forged documents.....	1,158	925	103	1,219	1,009	140	+11.8
Offences relating to currency.....	—	62	6	157	137	10	+116.2
Class VI.—Other Offences	2,585	2,078	220	3,212	2,589	277	+21.7
Criminal negligence in operation of motor vehicles.....	31	27	—	79	73	—	+170.4
Driving while ability to drive is impaired.....	223	202	1	224	214	4	+ 7.4
Driving while intoxicated.....	15	11	2	10	10	—	—23.1
Gaming, betting and lotteries.....	531	437	34	712	552	54	+28.7
Keeping bawdy houses.....	154	36	102	192	41	135	+27.5
Various other offences.....	1,631	1,365	81	2,025	1,699	84	+23.3
Totals, Criminal Code	38,808	32,585	2,400	42,613	35,201	2,992	+ 9.2
Federal Statutes							
Narcotic Control Act.....	516	290	151	520	290	170	+ 4.3
Other statutes.....	19	16	1	28	25	1	+52.9
Totals, Federal Statutes	535	306	152	548	315	171	+ 6.1
Grand Totals	39,343	32,891	2,552	43,161	35,516	3,163	+ 9.1

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

² Includes causing death in the operation of a motor vehicle or otherwise.

Table 3 shows that, in 1961, 49.0 p.c. of the persons convicted of indictable offences had not gone beyond elementary school grades in education, 50.8 p.c. were 24 years of age or younger and 35.4 p.c. were between the ages of 25 and 44, and 78.7 p.c. lived in urban centres. Of these offenders, 91.8 p.c. were males, 86.7 p.c. were born in Canada, 62.0 p.c. were unmarried, 20.7 p.c. were recorded as labourers and 12.1 p.c. had no remunerative employment.

3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1960 and 1961

Item	1960	1961	Item	1960	1961
	No.	No.		No.	No.
Total Persons Convicted	35,443	38,679	SEX		
TYPE OF OCCUPATION			Male.....	32,891	35,516
Agriculture.....	1,383	1,661	Female.....	2,552	3,163
Armed Services.....	286	332	EDUCATIONAL STATUS		
Clerical.....	1,233	1,362	Unable to read or write.....	375	424
Commercial and managerial.....	2,088	2,180	Elementary.....	17,576	18,533
Construction.....	4,940	4,559	High school.....	13,340	14,412
Finance.....	73	69	Superior.....	445	499
Fishing, trapping and logging.....	1,365	1,468	Grade not stated.....	500	396
Labourer.....	7,313	7,989	Not given.....	3,207	4,415
Manufacturing and mechanical.....	3,370	3,566	AGE		
Mining.....	599	633	16 to 19 years.....	10,970	11,178
Service—			20 to 24 years.....	7,737	8,481
Domestic.....	822	906	25 to 44 years.....	12,467	13,693
Personal.....	1,021	1,217	45 years or over.....	3,200	3,580
Professional.....	348	444	Not given.....	1,069	1,747
Public and protective.....	60	93	BIRTHPLACE		
Other.....	126	138	Canada.....	31,468	33,543
Student.....	2,007	2,340	British Isles and other Common-wealth.....	861	914
Transportation and communica-tions.....	2,983	2,966	United States.....	284	297
Unemployed and retired (incl. housewives).....	4,134	4,662	Europe.....	1,852	2,074
Not given.....	1,292	2,094	Asia.....	69	68
MARITAL STATUS			Other foreign countries.....	23	31
Single.....	22,902	23,980	Not given.....	886	1,752
Married.....	9,398	10,513	RESIDENCE		
Widowed.....	349	404	Urban centres.....	28,017	30,438
Divorced.....	311	373	Rural districts.....	6,247	6,563
Separated.....	1,437	1,556	Indeterminate.....	700	595
Not given.....	1,046	1,853	Not given.....	479	1,083

Female Offenders.—There were 3,163 female offenders convicted of indictable offences in 1961 compared with 2,552 in 1960. Of these offenders, Ontario accounted for 1,255, British Columbia 528 and Quebec 493. The ratio of female offenders convicted to total convictions moved upward from 7.2 p.c. in 1960 to 8.2 p.c. in 1961 with a provincial range from 2.4 p.c. in Prince Edward Island to more than 10 p.c. in Manitoba and British Columbia.

4.—Females Convicted of Indictable Offences, by Province, 1960 and 1961

Province or Territory	Females Convicted		Females Convicted to Total Convictions	
	1960	1961	1960	1961
	No.	No.	p.c.	p.c.
Newfoundland.....	25	68	5.3	9.7
Prince Edward Island.....	2	1	0.2	2.4
Nova Scotia.....	66	83	4.9	6.0
New Brunswick.....	38	35	4.3	3.4
Quebec.....	352	493	5.2	6.1
Ontario.....	1,035	1,255	7.7	9.0
Manitoba.....	244	267	11.9	11.3
Saskatchewan.....	86	100	5.9	5.7
Alberta.....	296	323	7.7	8.1
British Columbia.....	402	528	8.3	10.4
Yukon and Northwest Territories.....	6	10	2.8	4.0
Canada.....	2,552	3,163	7.2	8.2

Multiple Convictions.—Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1957 to 1961. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1957-61

Item	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences	4,308	4,685	4,396	4,940	5,463
3 offences	1,337	1,469	1,515	1,904	2,040
4 offences	826	852	816	933	1,080
5 offences	394	463	474	569	593
6 offences	259	290	298	365	357
7 offences	146	191	215	256	279
8 offences	159	180	186	196	207
9 offences	100	110	109	155	146
10 offences	87	104	69	109	125
11 to 20 offences	288	364	334	392	423
21 offences or over	95	163	113	119	144
Totals, Convicted of More than One Offence	7,999	8,871	8,505	9,938	10,857
Totals, Convicted of One Offence	23,766	25,675	22,587	25,505	27,822
Grand Totals	31,765	34,546	31,092	35,443	38,679

Disposition of Cases and Previous Convictions.—Of all suspects before the courts for indictable offences in 1961, 89.6 p.c. were adjudged guilty. There was considerable variation among provinces with Prince Edward Island showing 100 p.c. and Ontario 86.3 p.c.

6.—Persons Charged and Convicted of Indictable Offences, by Province, 1960 and 1961

Province or Territory	1960			1961		
	Persons Charged	Persons Convicted		Persons Charged	Persons Convicted	
	No.	No.	p.c.	No.	No.	p.c.
Newfoundland	491	469	95.5	722	703	97.4
Prince Edward Island	34	32	94.1	42	42	100.0
Nova Scotia	1,494	1,343	89.9	1,585	1,383	87.3
New Brunswick	911	888	97.5	1,051	1,038	98.8
Quebec	7,601	6,806	89.5	8,997	8,064	89.6
Ontario	15,458	13,482	87.2	16,198	13,985	86.3
Manitoba	2,122	2,050	96.6	2,514	2,368	94.2
Saskatchewan	1,546	1,463	94.6	1,826	1,743	95.5
Alberta	4,026	3,831	95.2	4,269	4,012	94.0
British Columbia	5,441	4,868	89.5	5,697	5,092	89.4
Yukon and Northwest Territories	219	211	96.3	260	249	95.8
Canada	39,343	35,443	90.1	43,161	38,679	89.6

In 1961, 27.3 p.c. of the convicted persons had no previous conviction, 13.6 p.c. had previously been found guilty of one offence and 35.9 p.c. had two or more earlier convictions. Court records for the other 23.2 p.c. were not obtained.

7.—Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1960 and 1961

Item	1960	1961	Item	1960	1961
	No.	No.		No.	No.
Charged	39,343	43,161	Males convicted	32,891	35,516
Acquitted	3,676	4,173	Females convicted	2,552	3,163
Disagreement of jury	6	8	First conviction	10,759	10,566
Stay of proceedings	151	225	Second conviction	5,148	5,265
No Bill	29	22	Reiterated convictions	13,021	13,877
Detained because of insanity	38	54	Not given	6,515	8,971

Sentences, Method of Trial and Court Proceedings.—Table 8 summarizes sentences given for indictable offences, Table 9 illustrates the method of trial and disposition of cases, and Table 10 shows persons charged and convicted of indictable crimes according to trial court.

Two kinds of sentences maintain for a certain period of time a relationship between the person dealt with by the court and the legal institutions of a community—probation and commitment to an institution. The institutions to which a person can be committed are of many kinds, including penitentiaries, reformatories, gaols and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.

8.—Sentences Given for Indictable Offences, by Province, 1961

Sentence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Option of fine	127	13	348	242	1,456	3,044	543	463	1,201	1,030	41	8,508
Gaol—												
Under one year	292	21	343	336	2,812	3,569	575	657	1,275	1,688	144	11,712
One year or over	50	1	12	55	247	643	163	126	498	473	13	2,281
Reformatory	3	—	5	—	113	1,546	23	—	3	371	—	2,064
Penitentiary—												
Under two years	—	—	2	10	11	57	1	12	8	15	—	116
Two years and under five	28	3	180	96	743	740	133	82	259	276	9	2,549
Five years and under ten	2	—	6	7	92	120	11	7	13	41	1	300
Ten years and under fourteen	—	—	—	—	26	15	—	1	8	10	2	62
Fourteen years or over	—	—	—	1	23	6	—	—	—	2	—	32
Life	—	—	2	—	4	8	1	—	1	2	—	18
Preventive	—	—	—	—	—	—	—	—	—	2	—	2
Death	—	—	—	1	2	5	1	—	—	3	—	12
Suspended sentence without probation	151	13	217	193	1,486	1,053	537	181	195	422	34	4,482
Suspended sentence with probation	50	4	269	97	1,039	3,175	380	214	551	757	5	6,541
Totals	703	55	1,384	1,038	8,054	13,981	2,368	1,743	4,012	5,092	249	38,679

9.—Method of Trial of Persons Charged with Indictable Crimes, showing Disposition of Cases, by Sex and by Province, 1961

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By Judge and Jury—												
Convicted.....M.	5	—	27	9	131	256	33	37	7	78	7	590
F.	—	—	—	—	5	18	1	—	1	3	—	28
Acquitted.....M.	4	—	17	2	17	135	5	10	1	44	4	239
F.	—	—	—	—	1	13	1	1	—	1	—	17
Detained because of insanity.....M.	—	—	—	—	5	2	—	—	—	4	—	11
F.	—	—	—	—	—	2	—	—	1	2	—	5
Disagreement of jury...M.	—	—	—	—	—	6	—	—	—	2	—	8
Stay of proceedings...M.	—	—	1	—	—	—	—	1	—	11	—	13
F.	—	—	1	—	—	—	—	1	—	4	—	6
No Bill.....M.	—	—	2	—	—	18	—	—	—	—	—	20
F.	—	—	—	—	—	2	—	—	—	—	—	2
By a Judge without Jury												
Convicted.....M.	2	5	40	3	1,169	259	33	55	220	113	6	1,905
F.	—	—	—	—	46	7	5	1	24	8	—	91
Acquitted.....M.	1	—	8	—	368	93	8	14	43	48	4	587
F.	—	—	—	—	29	8	—	—	1	5	1	44
Detained because of insanity.....M.	—	—	—	—	—	—	—	—	2	—	—	2
Stay of proceedings...M.	—	—	—	—	—	2	1	—	6	7	1	17
F.	—	—	—	—	—	2	—	1	—	2	—	5
By a Magistrate with Consent—												
Convicted.....M.	363	19	665	510	3,444	7,187	937	844	1,867	2,078	122	18,036
F.	19	1	34	10	134	441	64	38	86	189	5	1,021
Acquitted.....M.	7	1	80	4	162	926	6	16	84	169	—	1,455
F.	1	—	2	—	14	81	—	2	8	18	—	126
Detained because of insanity.....M.	2	—	2	1	6	5	—	2	2	1	—	21
F.	—	—	—	—	—	—	—	—	4	—	—	4
Stay of proceedings...M.	—	—	—	1	—	—	37	1	1	30	—	70
F.	—	—	—	—	—	—	8	—	—	15	—	23
By a Magistrate, Absolute Jurisdiction—												
Convicted.....M.	265	30	569	481	2,817	5,024	1,098	707	1,595	2,295	104	14,985
F.	49	—	49	25	308	789	197	61	212	328	5	2,023
Acquitted.....M.	4	1	73	5	297	817	14	32	92	183	1	1,519
F.	—	—	13	—	27	98	1	2	10	35	—	186
Detained because of insanity.....M.	—	—	3	—	3	2	—	—	1	1	—	10
F.	—	—	—	—	1	—	—	—	—	—	—	1
Stay of proceedings...M.	—	—	1	—	1	—	56	—	1	19	—	78
F.	—	—	—	—	—	—	9	—	—	4	—	13
Totals, Persons Charged.	722	57	1,587	1,051	8,985	16,193	2,514	1,826	4,269	5,697	260	43,161
Totals, Persons Con- victed.....	703	55	1,384	1,038	8,054	13,981	2,368	1,743	4,012	5,092	249	38,679

10.—Persons Charged and Convicted of Indictable Crimes according to Trial Court, by Province, 1960 and 1961

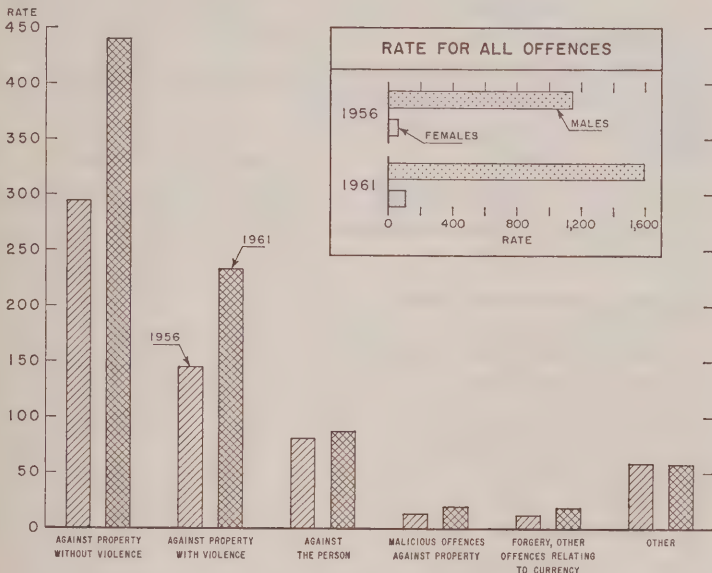
Province or Territory and Item	1960					1961				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged.....	420	57	1	13	491	661	49	3	9	722
Convicted.....	403	56	1	9	469	647	49	2	5	703
Prince Edward Island—										
Charged.....	31	—	3	—	34	38	—	4	—	42
Convicted.....	31	—	1	—	32	38	—	4	—	42
Nova Scotia—										
Charged.....	1,409	4	42	39	1,494	1,484	5	49	47	1,585
Convicted.....	1,269	4	37	33	1,343	1,311	5	41	26	1,383
New Brunswick—										
Charged.....	892	2	4	13	911	1,033	4	3	11	1,051
Convicted.....	877	2	3	6	888	1,022	4	3	9	1,038
Quebec—										
Charged.....	5,152	1,157	1,167	125	7,601	5,990	1,235	1,647	125	8,997
Convicted.....	4,729	1,145	845	87	6,806	5,488	1,224	1,248	104	8,064
Ontario—										
Charged.....	14,578	31	720	129	15,458	15,316	59	644	179	16,198
Convicted.....	12,873	30	508	71	13,482	13,391	54	437	103	13,985
Manitoba—										
Charged.....	1,760	265	64	33	2,122	2,227	200	48	39	2,514
Convicted.....	1,718	265	45	22	2,050	2,099	197	39	33	2,368
Saskatchewan—										
Charged.....	1,430	2	62	52	1,546	1,698	7	75	46	1,826
Convicted.....	1,381	2	46	34	1,463	1,643	7	56	37	1,743
Alberta—										
Charged.....	3,717	3	21	285	4,026	3,935	28	58	248	4,269
Convicted.....	3,563	3	19	246	3,831	3,732	28	49	203	4,012
British Columbia—										
Charged.....	4,538	572	186	145	5,441	4,755	610	185	147	5,697
Convicted.....	4,108	549	125	86	4,868	4,295	595	123	79	5,092
Yukon and Northwest Territories—										
Charged.....	215	—	—	4	219	237	—	18	5	260
Convicted.....	209	—	—	2	211	236	—	10	3	249
Canada—										
Charged.....	34,142	2,093	2,270	838	39,343	37,374	2,197	2,734	856	43,161
Convicted.....	31,161	2,056	1,630	596	35,443	33,902	2,163	2,012	602	38,679

Subsection 2.—Young Adult Offenders (16-24 Years) Convicted of Indictable Offences

Attention has been focused in recent years on the needs of the young adult offenders of from 16-24 years of age who constitute a promising field for modern reception and diagnostic facilities equipped with educational, trade training and other formative disciplines. While young men and women in this age group account for under 15 p.c. of the total population 16 years of age or over, they form over half the criminal population committing indictable offences. The group includes a wide range, from some of the most daring offenders who already may be experienced criminals to first offenders likely to be turned from crime by further education and training.

There were 19,659 young adult offenders in 1961 compared with 18,707 in 1960; of the former, 5,787 or 29.4 p.c. were 16 or 17 years of age, 5,391 or 27.4 p.c. were 18 or 19 years of age and 8,481 or 43.2 p.c. were between 20 and 24 years. In 1961 there were 18,425 male and 1,234 female young adult offenders convicted of indictable offences compared with 17,649 and 1,058, respectively, in 1960.

YOUNG ADULT OFFENDERS (16-24 YEARS OF AGE) CONVICTED
OF INDICTABLE OFFENCES, BY CLASS OF OFFENCE, 1956 AND 1961
(RATE PER 100,000 POPULATION 16-24 YEARS OF AGE)



11.—Young Adult Offenders, by Age Group, Sex and Province, 1960 and 1961

Year, Age Group and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1960												
16 - 17 years.....M.	89	5	244	152	1,502	2,032	277	220	520	701	18	5,760
F.	2	—	12	7	34	88	17	13	36	42	4	255
18 - 19 ".....M.	78	4	229	131	893	1,780	233	191	481	639	27	4,686
F.	2	—	7	4	31	105	44	11	29	36	—	269
20 - 24 ".....M.	133	8	293	201	1,506	2,657	378	310	794	877	46	7,203
F.	4	—	11	7	89	226	46	10	63	78	—	534
Totals, 1960	308	17	796	502	4,055	6,888	995	755	1,923	2,373	95	18,707
1961												
16 - 17 years.....M.	111	21	240	158	1,461	1,882	234	228	437	703	23	5,498
F.	9	—	14	5	65	90	11	15	31	47	2	289
18 - 19 ".....M.	122	6	230	194	996	1,921	308	247	492	540	25	5,081
F.	5	1	12	4	40	121	47	17	30	33	—	310
20 - 24 ".....M.	144	10	302	264	1,798	2,642	481	399	811	932	63	7,846
F.	16	—	13	9	105	220	49	21	85	113	4	635
Totals, 1961	407	38	811	634	4,465	6,876	1,130	927	1,886	2,368	117	19,659

12.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1960 and 1961

Class of Offence	1960		1961	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code				
Class I.—Offences against the Person	1,830	71	1,937	85
Abduction and kidnapping.....	22	—	23	—
Assault, causing bodily harm, common, on police and obstruction.....	1,282	63	1,364	56
Offences against females ¹	325	2	321	7
Causing death by criminal negligence, ² manslaughter and murder.....	36	—	33	—
Attempted murder, causing bodily harm and danger.....	39	—	42	4
Duties tending to preservation of life.....	—	1	1	2
Other offences against the person.....	126	5	153	16
Class II.—Offences against Property with Violence	5,283	73	5,254	82
Breaking and entering a place, extortion and robbery.....	5,283	73	5,254	82
Class III.—Offences against Property without Violence	8,906	676	9,295	794
Fraud and false pretences.....	441	92	479	112
Having in possession.....	804	35	881	43
Theft.....	7,661	549	7,935	639
Class IV.—Malignous Offences against Property	380	19	456	16
Arson and other fires.....	32	6	39	4
Other interference with property.....	348	13	417	12
Class V.—Forgery and Other Offences Relating to Currency	374	49	397	60
Forgery and uttering forged documents.....	351	48	362	58
Offences relating to currency.....	23	1	35	2
Class VI.—Other Offences	823	97	1,018	105
Criminal negligence in operation of motor vehicles.....	13	—	35	—
Driving while ability to drive is impaired.....	16	—	45	2
Driving while intoxicated.....	3	1	2	—
Gaming, betting and lotteries.....	28	1	29	8
Keeping bawdy houses.....	6	44	7	49
Various other offences.....	757	51	900	46
Totals, Criminal Code	17,596	985	18,357	1,142
Federal Statutes				
Narcotic Control Act.....	51	73	65	91
Other statutes.....	2	—	3	1
Totals, Federal Statutes	53	73	68	92
Grand Totals	17,649	1,058	18,425	1,234

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

² Includes causing death in the operation of a motor vehicle or otherwise.

13.—Disposition of Sentences for Indictable Offences, by Sex, 1960 and 1961

Disposition of Sentences	1960				1961			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence.....	2,063	224	1,725	346	2,031	218	1,825	408
Probation.....	4,277	306	1,059	178	4,666	392	1,266	217
Fine.....	2,988	205	3,922	588	3,090	240	4,391	787
Gaoi.....	5,528	259	6,411	299	5,911	311	7,338	433
Reformatory.....	1,554	52	486	33	1,446	57	524	37
Penitentiary.....	1,235	12	1,633	50	1,275	16	1,741	47
Death.....	4	—	6	—	6	—	6	—

Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction are triable by magistrates and justices of the peace under Part XXIV of the Criminal Code (SC 1953-54, c. 51) or under the provincial summary conviction Acts as the case may be. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges. In these cases, following arrest or summons to appear in court, the accused person must be tried by a magistrate or justice of the peace without the intervention of jury. Such cases are heard in police court with the minimum of delay.

14.—Convictions for Summary Conviction Offences, by Type, 1960 and 1961

Type of Offence	1960	1961	Increase or Decrease 1960-61
	No.	No.	p.c.
Criminal Code	83,198	89,729	+ 7.8
Attempts, conspiracies, accessories, counselling.....	114	190	+66.7
Attempt to commit suicide.....	207	207	—
Bawdy house.....	599	549	— 8.3
Causing disturbance by being drunk.....	3,602	5,651	+56.9
Common assault.....	6,413	7,542	+17.5
Communicating venereal disease.....	33	30	— 9.1
Contempt of court.....	120	74	—38.3
Corrupting morals.....	87	78	— 20.3
Cruelty to animals.....	64	119	+85.9
Damage not exceeding \$50 and other interference with property.....	3,259	3,256	— 0.1
Disorderly conduct.....	13,886	12,005	—13.5
Duty of persons to provide necessities.....	1,785	1,989	+11.4
Duty to safeguard dangerous places.....	192	1,176	— 8.3
Fraudulently obtaining food or lodging.....	972	1,087	+11.8
Fraudulently obtaining transportation.....	148	151	+ 2.0
Gaming, betting, lotteries.....	3,019	3,097	+ 2.6
Injuring bird or animal other than cattle.....	52	75	+44.2
Intimidation.....	273	293	+ 7.3
Motor Vehicle —			
Criminal negligence in operation of motor vehicle.....	841	1,045	—24.3
Driving while ability to drive is impaired.....	21,050	23,151	+10.0
Driving while disqualified.....	5,142	5,906	+14.9
Driving while intoxicated.....	2,357	2,125	— 9.8
Failing to stop at scene of accident.....	3,982	4,426	+11.7
Motor vehicle equipped with smoke screen.....	7	34	+385.7
Taking motor vehicle without consent.....	1,259	1,404	+11.5
Offensive weapons.....	1,103	1,052	— 4.6
Personating peace officer.....	60	75	+25.0
Recognizance, breach of.....	1,256	1,340	+ 6.7
Vagrancy.....	7,116	7,685	+ 8.0
Other Criminal Code.....	4,215	4,917	+16.7
Federal Statutes	29,059	33,678	+15.9
Customs.....	250	242	— 3.2
Excise.....	1,004	743	—26.0
Fisheries.....	699	669	— 4.3
Food and Drugs and Inspection and Sales.....	107	96	—10.3
Harbour Board and Merchant Seamen's.....	1,587	3,438	+116.6
Immigration.....	—	59	—
Income Tax.....	4,384	4,934	+12.5
Indian —			
Intoxication.....	8,379	8,296	— 1.0
Other.....	2,951	2,706	— 8.3
Juvenile Delinquents —			
Adults who contribute to delinquency.....	1,832	1,977	+ 7.9
Incorrigibility.....	541	683	+26.2
Inducing child to leave home, etc.....	144	31	—78.5
Sexual immorality.....	158	371	+134.8
Lord's Day.....	165	67	—59.4
Narcotic Control.....	43	30	—30.2
Railway.....	1,067	1,200	+12.5
Unemployment Insurance.....	3,392	5,523	+62.8
Weights and Measures.....	54	106	+98.3
Other federal statutes.....	2,302	2,507	+ 8.9
Provincial Statutes	759,168	906,750	+19.4
Children of Unmarried Parents.....	624	635	+ 1.8
Deserted Wives and Children's Maintenance.....	4,641	5,056	+ 8.9
Game and Fisheries.....	6,575	6,994	+ 6.4

14.—Convictions for Summary Conviction Offences, by Type, 1960 and 1961—concluded

Type of Offence	1960	1961	Increase or Decrease 1960-61
	No.	No.	p.c.
Provincial Statutes—concluded			
Highway Traffic—			
Driving without due care and attention.....	34,470	39,185	+13.7
Other traffic.....	548,201	670,385	+22.3
Liquor Control—			
Intoxication.....	84,161	95,592	+13.6
Other.....	58,221	66,743	+14.6
Master and Servant.....	1,132	1,079	- 4.7
Medical, Dentistry and Pharmacy.....	203	201	- 1.0
Mental Diseases.....	1,184	1,168	- 1.4
Prairie and Forest Fire Prevention.....	171	275	+60.8
Protection of Children.....	2,626	3,761	+43.2
Public Health.....	185	162	-12.4
School Laws.....	348	622	+78.7
Other provincial statutes.....	16,426	14,892	- 9.3
Municipal By-laws.....	235,107	256,721	+ 9.2
Intoxication.....	13,185	11,200	-15.1
Traffic.....	182,120	203,724	+11.9
Other.....	39,802	41,797	+ 5.0
Prohibited Parking.....	1,814,008	1,822,405	+ 0.5
Totals, Convictions.....	2,920,540	3,109,283	+ 6.5

Subsection 4.—Appeals

Appeal is an important safeguard in Canada's legal system and the conviction of a jury or judge may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1961 there were 2,247 appeals in indictable cases disposed of by the courts, of which 56 were Crown appeals and 2,191 appeals of the accused. Of the Crown appeals, 34 were from acquittal and 22 from sentence while of the appeals of the accused 700 were from conviction and 1,491 from sentence. Appeals in summary conviction cases disposed of by the courts reached 1,569 in 1961. Of these, 252 were appeals of the informant and 1,317 appeals of the accused. The informant appeals comprised 217 from acquittal and 35 from sentence. The appeals of the accused were divided between 1,103 from conviction and 214 from sentence.

Section 3.—Juvenile Delinquents

Juvenile Delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the Criminal Code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency.

The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. In the interests of uniformity, it has been the practice of the Dominion Bureau of Statistics to publish information about juvenile delinquents 16 years of age or over in the annual report on *Statistics of Criminal and Other*

Offences and to publish data relating to those under 16 years of age in a report entitled *Juvenile Delinquents*. In 1961, 2,588 juveniles 16 and 17 years of age were found delinquent in those provinces where the upper age limit is under 17 or under 18 years of age.

Included in the statistics of juvenile delinquents are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency—the most serious—was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools, or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

15.—Juveniles brought before the Courts, by Province, and Total Dismissed and Delinquent, 1957-61

Province or Territory	1957	1958	1959	1960	1961	Percentage Change, 1960-61
	No.	No.	No.	No.	No.	
Newfoundland.....	319	354	274	421	413	-1.9
Prince Edward Island.....	36	26	42	35	52	+48.6
Nova Scotia.....	581	780	723	792	637	-19.6
New Brunswick.....	341	453	371	481	511	+6.2
Quebec.....	2,436	2,434	2,504	2,795	3,101	+10.9
Ontario.....	4,861	5,263	5,355	6,698	7,682	+14.7
Manitoba.....	792	891	754	1,212	993	-18.1
Saskatchewan.....	29	88	198	275	329	+19.6
Alberta.....	824	985	980	1,189	1,307	+9.9
British Columbia.....	1,705	1,850	2,093	2,111	1,949	-7.7
Yukon Territory.....	—	—	35	—	2	..
Northwest Territories.....	4	10	—	—	—	—
Canada.....	11,928	13,134	13,329	16,009	16,976	+6.0
Dismissed.....	331	416	370	517	570	-0.2
Adjudged <i>sine die</i>	1,918	1,327	1,273	1,527	1,191	-2.6
Delinquent.....	9,679	11,391	11,686	13,965	15,215	+2.4

16.—Percentage Change in the Number of Boys and Girls brought before the Courts, 1952-61

Year	Percentage Change from Preceding Year			Percentage Change from 1951		
	Boys' Cases	Girls' Cases	All Cases	Boys' Cases	Girls' Cases	All Cases
1952.....	- 5.0	+ 4.5	- 4.1	- 5.0	+ 4.5	- 4.1
1953.....	+ 8.3	+11.0	+ 8.5	+ 2.9	+15.9	+ 4.1
1954.....	- 0.6	- 4.2	- 1.0	+ 2.2	+11.0	+ 3.1
1955.....	+ 3.3	+25.9	+ 5.6	+ 5.6	+39.8	+ 8.9
1956.....	+26.9	+19.4	+26.0	+34.0	+66.9	+37.1
1957.....	+14.9	+21.0	+15.6	+ 54.0	+101.4	+ 58.5
1958.....	+10.4	+ 8.3	+10.1	+ 70.0	+118.7	+ 74.6
1959.....	+ 2.4	- 5.1	+ 1.5	+ 74.0	+107.5	+ 77.2
1960.....	+19.4	+26.0	+20.1	+107.7	+161.5	+112.9
1961.....	+ 6.3	+ 4.3	+ 6.0	+120.8	+172.6	+125.7

17.—Juvenile Delinquents, by Province, 1952-61

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1952....	215	29	356	267	628	2,889	409	81	317	877	—	6,068
1953....	196	33	443	235	773	2,975	360	49	357	952	4	6,377
1954....	218	43	440	224	678	2,945	341	59	428	956	—	6,332
1955....	254	30	390	202	1,040	3,138	401	57	535	978	—	7,025
1956....	336	48	412	311	1,184	3,945	593	44	715	1,391	6	8,985
1957....	301	35	492	324	1,351	4,051	708	26	766	1,621	4	9,679
1958....	343	25	676	431	2,229 ¹	4,108	790	85	906	1,788	10	11,391 ¹
1959....	262	42	623	355	2,410 ¹	4,199	629	182	911	2,038	35	11,686 ¹
1960....	409	35	682	460	2,692	5,364	1,019	231	1,031	2,042	—	13,965
1961....	400	52	551	487	2,801	6,819	723	260	1,230	1,890	2	15,215

¹ Includes 956 cases in 1958 and 35 cases in 1959 "Adjourned *sine die*", compiled for statistical purposes as juvenile delinquents.

18.—Total Delinquent Children, by Number of Delinquent Appearances, 1961, with Number of Appearances in Previous Years

Number of Delinquent Appearances	Total Delin- quent Child- ren	Delinquent Appearances in Previous Years											
		0	1 or More	1	2	3	4	5	6	7	8	9	10+
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1 or more.....	13,358	10,805	2,553	1,316	559	284	140	100	53	29	24	14	34
1.....	11,892	9,949	1,943	1,064	408	213	95	68	33	20	12	7	23
2.....	1,166	718	448	197	114	53	26	18	15	5	10	5	5
3.....	231	113	118	40	33	16	11	7	1	2	2	4	4
4.....	51	21	30	9	3	2	7	4	4	—	—	—	1
5.....	9	—	9	4	1	—	—	2	—	1	—	—	—
6.....	8	4	4	1	—	—	1	1	—	1	—	—	—
7.....	1	—	1	1	—	—	—	—	—	—	—	—	—

19.—Juvenile Delinquents by Group of Offence, and Ratio per 100,000 Population 7-15 Years of Age, 1952-61

Year	Delin- quencies against the Person		Delin- quencies against Property with Violence		Delin- quencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delin- quencies relating to Currency		Other Delin- quencies		Total Convictions	
	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation	No.	Ratio to Popu- lation
1952.....	172	8	1,456	65	2,496	112	633	28	25	1	1,286	58	6,068	272
1953.....	169	7	1,416	61	2,415	103	770	33	19	1	1,588	68	6,377	273
1954.....	184	7	1,444	59	2,489	102	673	28	32	1	1,510	62	6,332	259
1955.....	181	7	1,548	61	2,767	108	629	25	29	1	1,871	73	7,025	275
1956.....	250	9	1,888	69	3,572	131	839	31	39	1	2,397	88	8,985	329
1957.....	254	9	2,005	70	3,764	131	994	35	28	1	2,634	92	9,679	338
1958.....	346	12	2,268	76	4,436	148	985	33	36	1	3,320	111	11,391	381
1959.....	265	9	2,408	78	4,748	153	952	31	27	—	3,286	106	11,686	377
1960.....	369	11	2,953	92	5,694	177	1,272	40	36	1	3,641	113	13,965	434
1961.....	382	11	3,511	103	6,435	189	1,248	37	33	1	3,606	106	15,215	447

20.—Juvenile Delinquents classified by Type of Delinquency, 1957-61

Delinquency	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence.....	1	2	1	—	4
Murder, attempt.....	1	—	1	—	1
Rape and attempt, sexual intercourse and incest.....	5	6	4	5	5
Indecent assault (male and female).....	63	75	66	96	70
Assault, causing bodily harm and danger.....	38	17	25	42	36
Common assault.....	115	214	127	198	223
Interfering with transportation facilities.....	1	3	3	—	3
Other offences against the person.....	30	29	38	28	40
Breaking and entering a place.....	1,970	2,239	2,375	2,886	3,415
Robbery and extortion.....	35	29	32	66	96
Theft and having in possession.....	3,566	4,223	4,517	5,488	6,076
False pretences and fraud and corruption.....	24	19	24	35	35
Arson.....	83	58	55	91	74
Other interference with property.....	911	927	897	1,181	1,174
Forgery and delinquencies relating to currency.....	28	36	27	36	33
Incorrigibility and vagrancy.....	633	813	776	900	842
Immorality.....	197	253	267	258	238
Various other delinquencies.....	1,978	2,448	2,451	2,655	2,850
Totals.....	9,679	11,391	11,686	13,965	15,215

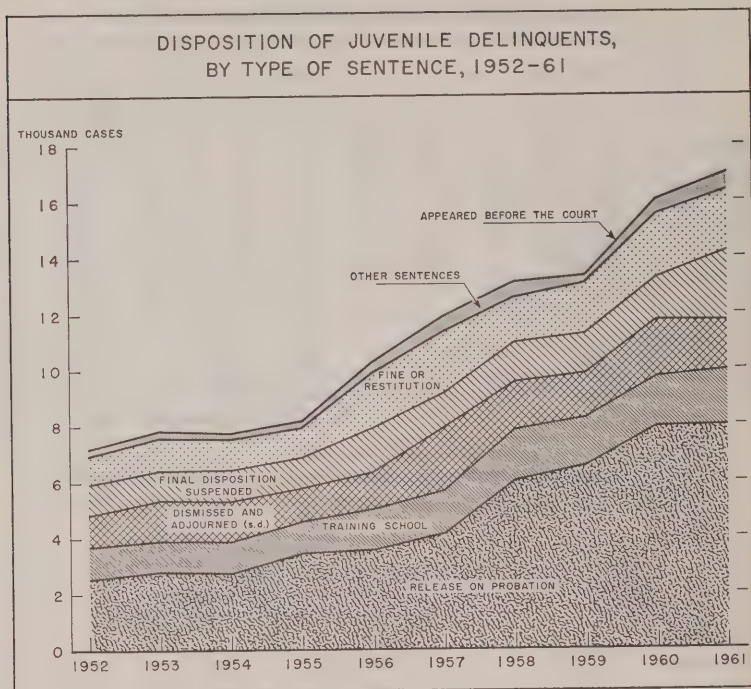
21.—Percentages of Delinquent Boys and Girls, by Age Group, 1960 and 1961

Age Group	1960			1961		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7 - 12 years.....	24.7	13.8	23.5	23.5	12.0	22.2
13 - 15 years.....	75.0	86.0	76.2	76.3	87.9	77.6
Not given.....	0.3	0.2	0.3	0.2	0.1	0.2
Totals.....	100.0	100.0	100.0	100.0	100.0	100.0

22.—Age, Sex and School Grade of Delinquent Boys and Girls, 1961

(B=Boys; G=Girls)

Age	School Grades																Total Delinquents	
	Elementary										Secondary		Auxiliary		Not Given			
	1-4		5		6		7		8									
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
7 years.....	28	1	—	—	—	—	—	—	—	—	—	—	1	—	1	—	30	1
8 ".....	117	6	—	—	—	—	—	—	—	—	—	—	—	4	—	—	121	6
9 ".....	261	8	21	1	3	—	—	—	—	—	—	—	2	—	7	1	294	10
10 ".....	297	14	121	13	36	3	2	—	—	—	—	—	5	—	14	1	475	31
11 ".....	258	13	236	11	210	17	38	4	7	—	—	—	4	1	18	—	771	46
12 ".....	207	10	336	16	478	28	359	41	53	10	5	—	11	3	30	3	1,479	111
13 ".....	116	9	281	21	507	44	700	81	477	65	76	19	24	2	73	11	2,254	252
14 ".....	94	12	208	21	434	52	908	145	1,044	164	745	153	54	11	128	19	3,615	577
15 ".....	88	12	188	26	328	44	773	94	996	161	1,778	291	64	7	221	41	4,436	676
Not given.....	—	—	—	—	—	—	—	—	1	—	—	—	1	—	27	1	29	1
Totals.....	1,466	85	1,391	109	1,996	188	2,780	365	2,578	400	2,604	463	166	24	523	77	13,504	1,711

**23.—Disposition of Delinquents, by Type of Sentence, 1952-61**

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Corporal Punishment		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
1952.....	243	4.0	2,412	39.8	148	2.4	1,015	16.7	1	--	1,152	19.0	1,095	18.1	2	--	..	..
1953.....	227	3.6	2,620	41.1	186	2.9	1,147	18.0	28	0.4	1,107	17.4	1,062	16.6	—	—	..	..
1954.....	199	3.1	2,595	41.0	174	2.8	1,095	17.3	27	0.4	1,121	17.7	1,119	17.7	2	--	..	..
1955.....	181	2.6	3,067	43.7	365	5.2	1,084	15.1	50	0.7	1,180	16.8	1,118	15.9	—	—	..	..
1956.....	359	4.0	3,155	35.1	404	4.5	2,015	22.4	30	0.3	1,440	16.0	1,577	17.6	—	—	5	0.1
1957.....	460	4.7	3,822	39.5	300	3.1	2,261	23.4	63	0.7	1,563	16.1	1,202	12.4	1	--	7	0.1
1958.....	504	4.4	5,728	50.3	294	2.6	1,624	14.3	13	0.1	1,822	16.0	1,389	12.2	3	--	14	0.2
1959.....	236	2.0	6,151	52.6	412	3.5	1,810	15.5	9	0.1	1,678	14.4	1,381	11.8	—	—	9	0.1
1960.....	442	3.2	7,413	53.1	518	3.7	2,289	16.4	42	0.3	1,791	12.8	1,456	10.4	—	—	14	0.1
1961.....	544	3.6	7,341	48.2	644	4.2	2,148	14.1	89	0.6	1,974	13.0	2,466	16.2	—	—	9	0.1

Section 4.—Adult Correctional Institutions and Training Schools

Subsection 1.—Statistics of Correctional Institutions and Training Schools

Correctional institutions may be classified under four headings: (1) Penitentiaries—operated for adult offenders by the Federal Government in which, generally speaking, sentences of over two years are served; (2) Reformatories—operated for adult offenders by the provinces in which individual sentences of up to two years are served; (3) Common Gaols—operated for adult offenders by the provinces or counties in which sentences of up to two years can be served but in which, generally speaking, short-term sentences are served; and (4) Training Schools—operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province.

There is a limited amount of statistical information available with respect to these types of institution. "In custody" figures shown in Table 24 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of tickets-of-leave and paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on ticket-of-leave and parole, deaths, pardons and releases on court order. In custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not serving sentence and, for training school population, juveniles on placement.

Population figures in Tables 24 and 25 are for a given day of the year, which is Mar. 31 except for Quebec gaols where populations are counted as of Dec. 31. These figures represent, in effect, a yearly census of correctional institutions and, as such, are not indicative of the daily average population count. For instance, if an abnormal number of commitments are made to a certain institution on or just prior to Mar. 31, the result will be an unrepresentative population total for the institution in that year.

With regard to the fluctuations that might have occurred during the year between census days, the total population of correctional institutions has shown a general increase since Mar. 31, 1957; totals for training schools and provincial adult institutions have shown a tendency to level off or decline slightly but penitentiary population has increased steadily.

24.—Population in Penitentiaries, Years Ended Mar. 31, 1957-61

Item	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
In custody at beginning of year.....	5,508	5,433	5,770	6,295	6,344
Received during year.....	2,977	3,919	3,918	4,523	4,973
Discharged during year.....	3,053	3,582	3,393	4,474	4,579
In custody at end of year.....	5,433	5,770	6,295	6,344	6,738

25.—Populations in Reformatories and Gaols and in Training Schools as at Mar. 31, 1957-61

Type of Institution	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
Reformatories and Gaols—					
Reformatories for men.....	3,257	3,890	3,806	3,769	4,012
Reformatories for women.....	145	164	172	144	180
Common gaols.....	6,337	7,138	7,188	6,983	7,629
Totals, Reformatories and Gaols.....	9,739	11,192	11,166	10,896	11,821
Training Schools—					
Training schools for boys.....	2,132	2,334	2,343	2,423	2,382
Training schools for girls.....	998	1,086	990	965	1,019
Totals, Training Schools.....	3,130	3,420	3,333	3,388	3,401

Subsection 2.—The Canadian Penitentiary Service*

The penitentiaries of Canada are administered by the Commissioner of Penitentiaries, responsible directly to the Minister of Justice. In the year ended Mar. 31, 1963, the federal penitentiaries system consisted of six maximum security, four medium security and thirteen minimum security institutions, all for males; one prison for women; one maximum security prison camp for males and females of the Freedomite Doukhobor Sect; and two Correctional Staff Colleges.

The six maximum security institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at New Westminister, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., St. Vincent de Paul, Que., and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are held in the provincially operated institution at St. John's, under financial arrangements authorized by Sect. 14 of the Penitentiary Act (SC 1960-61, c. 53).

The medium and minimum security institutions and the camps receive inmates transferred from the maximum security (receiving) institutions on the basis of their suitability for special forms of training, including vocational training. Of the medium security institutions, two—Collin's Bay Penitentiary and Joyceville Institution—are within a few miles of Kingston. The other two—the Federal Training Centre and the Leclerc Institution—are in close proximity to St. Vincent de Paul.

Seven minimum security correctional camps are operated as extensions of a main institution in their respective areas. These are located at William Head and Agassiz, B.C.; Beaver Creek and Landry Crossing near Bracebridge and Petawawa, Ont.; Gatineau (Gatineau Park) and Valleyfield, Que.; and Springhill, N.S. Five minimum security farm camps operate as extensions of the penitentiary at Dorchester, St. Vincent de Paul, Collin's Bay, Stony Mountain and Prince Albert, respectively.

The Prison for Women at Kingston, Ont., receives inmates transferred upon committal to penitentiaries in any part of Canada. Prior to Dec. 1, 1960, it operated as a detached portion of Kingston Penitentiary.

The special security Prison Camp for Freedomites of both sexes who have been sentenced to imprisonment in penitentiary is located near Agassiz, B.C., and is called Mountain Prison.

The two Correctional Staff Colleges—one at Kingston, Ont., and one at St. Vincent de Paul, Que.—are for the advanced training of penitentiary officers. The one at Kingston serves English-speaking or bilingual officers and that at St. Vincent de Paul is primarily for French-speaking officers from all parts of Canada. Both Staff Colleges provide excellent facilities for Service-wide conferences of institutional heads and other special groups of officers.

The Headquarters of the Service is located in Ottawa. During 1962, regional directorates were established at Kingston and St. Vincent de Paul for the Ontario and Quebec areas, respectively.

Subsection 3.—The National Parole System†

Parole is a means by which an inmate in any institution in Canada, if he gives definite indication of his intention to reform, can be released from prison. The purpose of parole is the protection of society, through the rehabilitation of the inmate. The Parole Board is as much concerned with the protection of society as with the reformation of the inmate and the welfare of an individual inmate must not be allowed to impair the success of the parole system, or the protection of the public.

* Prepared under the direction of A. J. MacLeod, Commissioner of Penitentiaries, Ottawa.

† Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

The function of the Parole Board is to select those inmates in the various institutions in Canada who show some indication of a sincere intention to reform and to assist them in doing so by a grant of parole. The inmate then is allowed to serve the balance of his sentence in society, but under supervision and subject to restrictions and conditions as to his conduct and behaviour, which are designed for his welfare and for the protection of society. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence, but only with the problem of deciding in each case whether or not there is a reasonable chance of reformation. Parole is not a matter of clemency and is not granted on compassionate or humanitarian grounds but only if it appears that there is at least a reasonable chance the inmate will lead a law-abiding life.

The National Parole Board is composed of a Chairman and four Members (one woman) and was formed in January 1959. It operates under the authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959 replacing the former Ticket-of-Leave Act. It has jurisdiction over any adult inmate in any prison in Canada convicted of an offence against an Act of the Parliament of Canada. It also has jurisdiction to revoke or suspend any sentence of whipping or any order made under the Criminal Code prohibiting any person from operating a motor vehicle.

The decision of the Board is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with the inmate. Reports are also obtained from a psychologist or psychiatrist, when available. Where necessary, a community investigation is conducted to secure as much information as possible about the man's family and background, his work record, and his position in the community. From all these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life. An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such an application at the institution, or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, a file is opened and investigation begun, the results of which are presented to the Board for decision.

All applications and reports are processed by the Parole Board staff at Ottawa. In addition to the headquarters staff, there are 24 regional officers stationed in ten regional offices across the country. They interview all applicants for parole to give them an opportunity of making verbal representations to a representative of the Board. The Regional Officers also submit to the Board reports of interviews and their assessment of the inmates' suitability for parole. These men have authority over the parolees in their respective areas and also give information and counsel to all inmates regarding possibility of parole and preparation for it. They may also issue a Warrant of Suspension and have a parolee arrested and placed in custody if it is necessary to prevent a breach of any term or condition of the parole. They are thus able to exercise effective and adequate control over all parolees in their respective areas.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the regional officer. If he violates the conditions of his parole or commits a further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted. If a parolee commits an indictable offence while on parole, his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence, plus any new term to which he was sentenced for the commission of the new offence.

It is essential that the general public should understand that the true purpose of punishment should be the reformation of the offender and not just vengeance or retribution. The treatment and training program in the institutions is a vital part of the correctional process and parole is an extension of this training outside the institution. It is not a matter of pampering prisoners but of trying to reform as many as possible and of giving prisoners a chance to rehabilitate if they seem to deserve it.

From the date of its establishment to Nov. 30, 1962, the Parole Board reviewed 30,619 cases, including applications for parole and automatic parole review, and granted 8,190 paroles. During the same period, the Board revoked 754 paroles, which is a failure rate of about 9 p.c. related to the number of paroles granted.

Section 5.—Police Forces

The Police Forces of Canada are organized under three groups: (1) the Federal Force, which is the Royal Canadian Mounted Police; (2) Provincial Police Forces—the Provinces of Ontario and Quebec have organized Provincial Police Forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) Municipal Police Forces—each urban centre of reasonable size maintains its own police force, or engages the services of the provincial police, under contract, to attend to police matters within its boundaries.

A new method of reporting police statistics, known as the Uniform Crime Reporting System, commenced on Jan. 1, 1962. The system was developed by the Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police, working through their committee on the Uniform Recording of Police Activities. The Uniform Crime Reporting System will allow for the eventual publication of more complete and meaningful data. For this reason police statistics are not carried in this edition of the Year Book.

Subsection 1.—The Royal Canadian Mounted Police

The Royal Canadian Mounted Police is a civil force maintained by the Federal Government and was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories. In recognition of its services, it was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The Force is under the control of the Minister of Justice and is headed by a Commissioner who holds the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from the non-commissioned ranks. The Force has complete jurisdiction in the enforcement of the federal statutes. By arrangement between the federal and provincial governments it enforces the provincial statutes and the Criminal Code in all provinces exclusive of Ontario and Quebec and under special agreement it polices some 120 municipalities. It is the sole police force in the Yukon and Northwest Territories, where it also performs various administrative duties on behalf of certain departments of the Federal Government. It maintains liaison officers in London and Washington and represents Canada in the International Criminal Police Organization which has headquarters in Paris.

Of the Force's 17 divisions, 12 are actively engaged in the work of law enforcement, as are some 41 subdivisions and 625 detachments. The five remaining divisions are "Headquarters", "Depot" and "N", which are maintained as training centres, and "Marine" and "Air", which support the operations of the land divisions. A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. Focal point of the Force's criminal identification work is the Headquarters Identification Branch; its services, together with those of the 40 divisional and subdivisional units and the three Crime Detection Laboratories, are available to police forces throughout Canada. The Force operates the Canadian Police College at which Force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

The uniform strength of the Force at Mar. 31, 1962 was 6,461, including Marine Constables and Special Constables, at which time it maintained some 1,762 motor vehicles, 18 aircraft, 71 ships and boats, 221 sleigh dogs, 25 police service dogs and 241 horses.

Subsection 2.—Provincial Police Forces

Quebec Provincial Police Force.—The Quebec Provincial Police Force is responsible for the maintenance of peace, order and public safety in the province, and for the prevention and investigation of criminal offences and of violation of the laws of the province.

The province is divided into two almost equal parts known as the Montreal Division and the Quebec Division. Each division is in turn subdivided into two sections comprising a variable number of detachments. There are 103 detachments throughout the province.

The Quebec Provincial Police Force is under the command of a Director General who is assisted by an officer holding the rank of Deputy Director General. Each division is headed by an Assistant Director. A commissioned officer is in command of each subdivision. The strength of the Force at the end of 1962 was 1,582 regular members.

Ontario Provincial Police Force.—The Ontario Provincial Police Force is administered by the Commissioner who has the rank and status of a deputy minister under the Attorney General. Its jurisdiction for law enforcement extends generally to all parts of Ontario outside of substantial urban areas.

With a total complement of about 2,500 (at present being increased), the Force has General Headquarters at Toronto, with 17 District Headquarters located at Chatham, London, Burlington, Niagara Falls, Toronto, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste. Marie, Timmins, Port Arthur and Kenora. District Headquarters operates through local detachments numbering 235 throughout the province.

In the plan of reorganization established in 1963, under a Commissioner and Deputy Commissioner, the Force has five administrative divisions—Administration, Staff Services, Special Services, Field, and Traffic—under Assistant Commissioners. Special Services branches operating out of General Headquarters include Criminal Investigation, Liquor Control, Anti-Highgrade, Anti-Gambling, and Anti-Rackets.

The Force operates one of the largest frequency-modulation radio networks in the world, with 74 fixed stations and 724 radio-equipped mobile units, including 687 motorcars, 30 motorcycles and seven mobile marine units.

History relates that in July 1875 John Wilson Murray was appointed to act as "Detective for the Provincial Government of Ontario" to pursue criminals and "run them down" in their havens of refuge. Murray performed his varied duties under the direction of Sir Oliver Mowat, the Attorney General of the province. At the time of Confederation and the first session of the first Parliament of Ontario in December 1867, there were a number of rural or provincial police. These officers were unpaid and if any remuneration was received for their services it was derived through the fee system. In 1877 a major reform occurred when, under the Constables Act (RSO 1877, c. 72), the necessity for giving certain constables jurisdiction throughout the province was recognized. County judges were authorized to allocate provincial constables to every county and district in Ontario.

Later, the opening up of the mining areas in the north of the province and the accompanying lawlessness brought to the fore the realization that more adequate law enforcement measures were a necessity. Consequently, an Order in Council dated Oct. 13, 1909 (confirmed by 10 Edw. VII, c. 39) was passed providing for the establishment of the Ontario Provincial Police Force, to be composed of a Superintendent and such inspectors and constables as were deemed necessary. The officers were stationed throughout the northern portion of the province and at all border points in southern Ontario. The Force was

completely reorganized in 1921 under the authority of the Ontario Provincial Police Act, the appointment of a Commissioner of Police for Ontario was made and the strength of the Force considerably increased.

The Constables Act was amended in 1929 with a view to establishing closer relationship and co-operation between the Provincial Police Force and county constabularies. Twenty-eight counties took advantage of this legislation and a member of the Ontario Provincial Police was appointed as Acting High Constable in each. In March 1930, the control and administration of the officers who had been enforcing the Highway Traffic Act under the supervision of the Department of Public Highways was transferred to the Department of the Attorney General under the Commissioner of the Ontario Provincial Police. By the Police Act, 1946, proclaimed Feb. 1, 1947, all former legislation dealing with constables was repealed and the duties and responsibilities of police forces, for the first time in the history of the province, were clearly defined. Current legislation governing the Force is contained in Part IV of the Police Act.

CHAPTER IX.—AGRICULTURE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

CHANGES IN CANADIAN AGRICULTURE AS REFLECTED BY THE CENSUS OF 1961*

Canadian agriculture has experienced considerable technological change in recent years, particularly since the end of the Second World War. As in most other industries, the trend has been to increased mechanization and specialization. The effects of these renovations are reflected in the revenue derived from agricultural production, although it must be kept in mind that climatic conditions have always been an important determinant of farm output.

In general, agricultural production, as measured in value terms, increased fairly consistently for the two decades following the early 1930's, after which time there was a tapering off of the value of farm output. Agriculture's "gross domestic product at factor cost", which represents accrued net farm income plus payments to hired labour and an allowance for capital consumption, averaged \$389,000,000 a year for the 1930-34 period. The annual average rose to \$488,000,000 for the period 1935-39, \$966,000,000 for 1940-44 and \$1,444,000,000 for 1945-49 and reached a peak of \$2,010,000,000 for 1950-54. In the subsequent five-year period, the value of agricultural output declined to an annual average of \$1,737,000,000, followed by a slight increase to \$1,755,000,000 in the 1960-62 period.

Although total agricultural production in value terms has shown a large increase in the past three decades, its rate of increase appears to have been less than that of other industries. This slower relative increase is shown by the proportion represented by agriculture of the "gross domestic product at factor cost" for all industries. The proportion represented by the value of farm output averaged 15.9 p.c. for the 1926-29 period, declined

* Prepared by the Census of Agriculture Section, Census Division, Dominion Bureau of Statistics. Summary statistics on which this material is based appear in Section 5 of this Chapter.

to 11.6 p.c. in 1930, and during the 1931-53 period fluctuated from a low of 8.0 p.c. in 1931 to a high of 12.5 p.c. in 1948 and 1951. Since 1953, agriculture's share has been less than 7.5 p.c., reaching a low of 4.6 p.c. in 1961 but recovering to 5.5 p.c. in 1962.

Upon examination of the agriculture industry itself, an indication of the technological change that has occurred in Canadian agriculture is reflected in the decrease in the number of farms and the corresponding increase in the average size of farm. These changes are tied in with increased farm mechanization which has enabled the farm operator to operate a larger farm with the same amount of labour or less. Also, the larger farm area reduces per-acre machine costs and is one of the ways that the farmer can offset the steady increase in the cost of farm machinery.

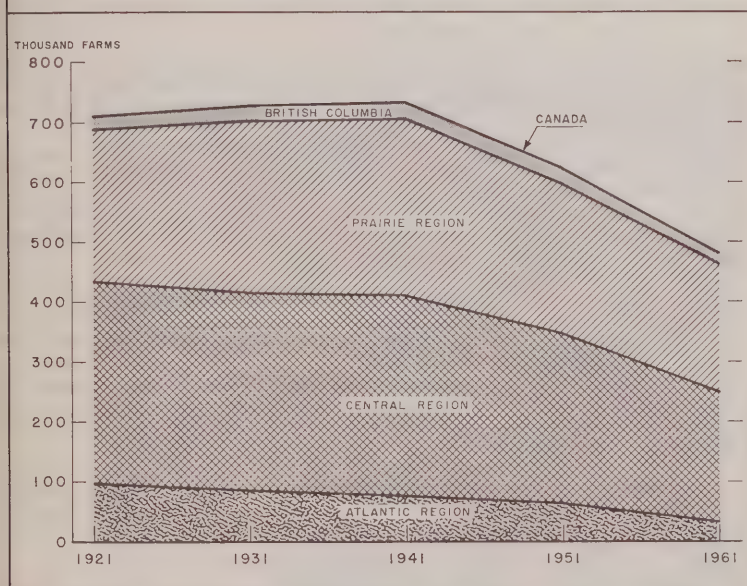
Number and Size of Farms.—The declining trend in the number of farms in Canada, which was first evident in the 1941-51 decade, continued in the latest intercensal period, 1956-61. A total of 480,903 farms was recorded in the 1961 Census for all Canada, 16.4 p.c. fewer than the corresponding total of 575,015 farms in 1956 and 22.8 p.c. fewer than the 1951 total of 623,091 farms. A peak total of 732,832 farms was recorded in the 1941 Census. Part of the reduction in the number of farms between 1956 and 1961 was attributable to a change in farm definition. (In 1961, a farm was defined as a holding of one acre or more with sales of agricultural products during the past 12 months of \$50 or more.)* It is estimated that 40,731 holdings were not classified as farms in 1961 for this reason. Thus, without the change in farm definition, there would have been a reduction of 9.3 p.c. in the number of farms from 1956 to 1961. Including the effect of the change in farm definition, the greatest decrease in number of farms took place in the Atlantic Region where the 33,391 farms in 1961 represented a decrease of 47.6 p.c. from the number recorded in 1951. In the other regions, however, the percentage reductions were much less. In the Central Region the decrease was 23.6 p.c. to a total of 217,110 farms in 1961, in the Prairie Region it was 15.4 p.c. to 210,442 farms, and in British Columbia, 24.5 p.c. to 19,934 farms.

Historically, large increases in farm area were recorded from 1911 to 1941, during which period the total rose from 108,968,715 acres to 173,563,282 acres. This increase was attributable mainly to the agricultural development of the Prairie Region and since 1941 the total farm area of the country has changed little. In 1961 it amounted to 172,551,051 acres, slightly less than the record high of 174,046,654 acres recorded in 1951. During the 1911-61 period, some regional differences prevailed. In the Atlantic Region (excluding Newfoundland), the total farm area gradually declined each census year from 11,000,808 acres in 1911 to 5,444,788 acres in 1961. The experience in this region was that large areas of land brought under cultivation at the turn of the century proved to be submarginal for agricultural purposes and were later abandoned as farm land. In the Provinces of Quebec and Ontario, the farm area increased from 37,785,052 acres in 1911 to a high of 40,450,545 acres in 1941, after which it declined to 32,776,999 acres in 1961. In the Prairie Provinces, the farm area of 57,642,844 acres in 1911 rose to 129,814,122 acres in 1961; while the largest increases occurred during the 1911-41 period, those recorded in recent census years for the Prairie Region have largely offset the acreage decreases recorded in the Eastern Provinces. The amount of farm land in British Columbia, reported as 2,540,011 acres in 1911, increased steadily to 4,702,274 acres in 1951 but dropped back to 4,506,552 acres in 1961.

As already stated, relatively large increases occurred in average size of farm (in terms of acreage) during the 1951-61 decade, although again it should be noted that a contributing factor for this particular period was the change in farm definition which resulted in fewer farms in 1961. The average size of farm for the Atlantic Region in 1961 was 163 acres compared with 123 acres in 1951; for the Central Region, the average size was 151 acres in 1961 and 133 acres in 1951; for the Prairie Provinces it was 617 acres, 119 acres above the 1951 figure; and for British Columbia 226 acres compared with 178 acres. Another indication of the increasing size of farm was the value of sales reported for the farms. In 1961,

* See also p. 476.

NUMBER OF FARMS BY PROVINCE AND REGION,
CENSUS YEARS 1921-61



49,841 farms or 10.4 p.c. of all the farms of Canada reported sales valued at \$10,000 or more; the comparable figures in 1951 were 21,213 farms or 3.4 p.c. of all farms. In 1961, 18.8 p.c. of the farms were included in the \$5,000-\$9,999 sales group compared with 11.1 p.c. in 1951; the actual numbers were 90,419 farms and 69,019 farms, respectively.

Land Use.—The proportion of farm land classed as improved has moved slightly upward during the past two decades. In 1961, 59.9 p.c. of the total farm area was included in this category compared with 55.6 p.c. in 1951 and 52.8 p.c. in 1941. The proportions of farm land classed as improved in the Atlantic Region and British Columbia in 1961 were much below the average for Canada—33.6 p.c. and 28.9 p.c., respectively—and the proportions in the Central Region and the Prairie Region, at 60.7 p.c. and 61.9 p.c., were higher.

Slightly over one in every three acres (36.2 p.c.) of Canadian farm land in 1961 was planted to crops, the proportions ranging from a high of 40.3 p.c. in the Central Region to a low of 17.5 p.c. in British Columbia. Improved pasture as a proportion of total farm area was highest in the Central Provinces where it amounted to 17.1 p.c. For all other regions, the ratio was less than one in every ten acres. Most of the summerfallow acreage was concentrated in the Prairie Provinces, one fifth of the farm area (21.5 p.c.) in the region being reported in that category in 1961. For Canada as a whole, 10 p.c. of the farm area was reported in woodland although there was considerable variation between regions; the range was from a high of 53.5 p.c. in the Atlantic Region to a low of 4.5 p.c. in the Prairies.

Tenure of Farm Operator.—The trend toward fewer and larger farms has been accompanied by an increase in the proportion of farms operated by part owner—part tenant operators, particularly in the Prairie Region. This trend has been evident during the past two decades and reflects a preference to acquiring additional land through renting or leasing rather than buying when capital is limited. For all Canada, one in every five farms (20.9 p.c.) was included in the part owner—part tenant group in 1961 compared with 14.3 p.c. in 1951 and 11.6 p.c. in 1941. The owner-operated group (including managed farms) was by far the largest although some decline took place—from 78.5 p.c. of all farms in 1951 to 73.4 p.c. in 1961. The remaining group, tenant farms, made up only 5.7 p.c. of the total in 1961 and 7.2 p.c. in 1951.

The largest number of owner-operated farms (including managed farms) was in the Central Region, where the 185,847 farms in that category constituted 85.6 p.c. of all the farms in the region. In the Prairie Region 120,747 farms or 57.4 p.c. of all the farms were in that group and corresponding proportions for the Atlantic Region and British Columbia were 89.1 p.c. and 82.6 p.c., respectively. The part owner—part tenant group included 33.2 p.c. of the Prairie Region farms in 1961 compared with 26.0 p.c. in 1951; also in that group in 1961 were 10.0 p.c. of the Atlantic Region farms, 11.2 p.c. of the Central Region farms and 13.2 p.c. of the British Columbia farms. Traditionally, tenant-operated farms have been most prevalent in the Prairie Region where the 19,703 farms included in that group in 1961 represented 71.1 p.c. of the group total for Canada and 9.4 p.c. of all the farms in the region.

The proportion of the total farm area owned by the farm operator changed little from 1951 to 1961—in the former year it was 74.5 p.c. and in the latter 74.2 p.c. The proportions in the different regions in 1961 ranged from 96.2 p.c. in the Atlantic Region to 68.9 p.c. in the Prairie Region.

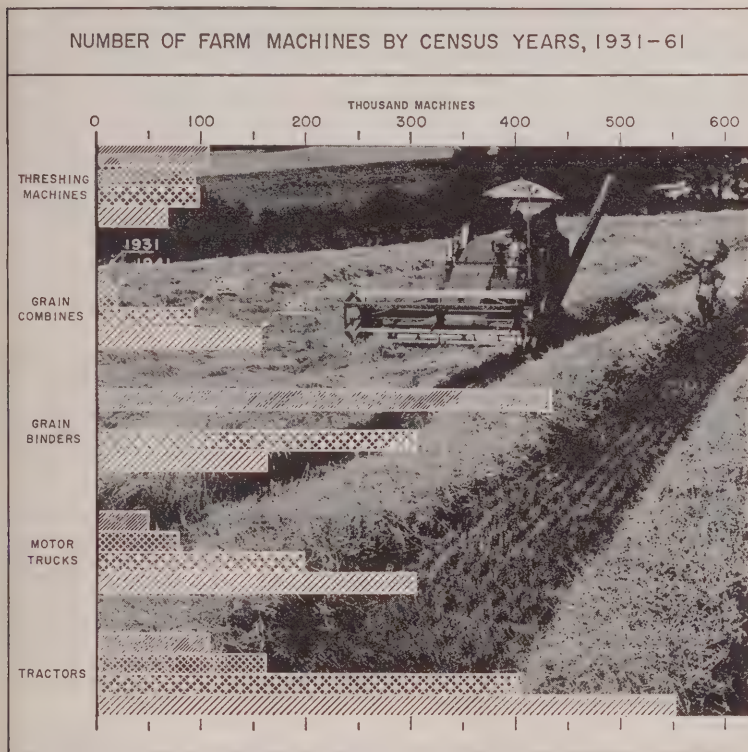
Farm Machinery.—The latest census gives a positive picture of the mechanization of agricultural operations. The value of farm machinery and equipment on Canadian farms in 1961 was placed at approximately \$2,600,000,000, almost 40 p.c. higher than the value of such equipment in 1951.

In 1961, there were 549,789 tractors reported on farms across the country, which was an average of 114 tractors for every 100 farms. Ten years earlier, there were 64 tractors for every 100 farms and twenty years earlier there were 22 for every 100 farms. In the Prairie Region where the farms are larger in size, there were 290,700 tractors, which represented 138 per 100 farms.

As would be expected, motor trucks were also much more prevalent on farms. The 302,012 trucks reported on farms across the country in 1961 represented an average of 63 per 100 farms, a considerable increase over the 31 trucks for every 100 farms in 1951. In the Prairie Provinces, the 1961 average was 88 trucks per 100 farms.

The coming into common use of the combine in place of the binder and threshing machine, particularly in the great grain-growing areas of the mid-west, is also reflected by the census. In 1961 there were 155,611 grain combines on the farms of Canada, 81.8 p.c. of them located in the Prairie Provinces where there were 65 for every 100 farms; in 1951 there were 32 combines for every 100 farms in the Prairie Region and in 1941 only 6. Conversely, the number of grain binders dropped from 303,374 in 1951 to 160,575 in 1961 and the number of threshing machines from 96,691 to 66,057.

Farm Electrification.—The extent of the electrification of farms is also indicated by the census results. In 1961, 85.2 p.c. of Canadian farms had electricity, a considerable increase over the 73.5 p.c. in 1956 and the 51.3 p.c. in 1951. The farms in the two central provinces reported a high incidence of electrification in 1961—97.3 p.c. in Quebec and 95.2 p.c. in Ontario. In the Atlantic Region, New Brunswick reported 96.5 p.c. of its farms as electrified, Nova Scotia 95.5 p.c. and Newfoundland 65.8 p.c.; extensive electrification took place in Prince Edward Island during the decade, the proportion rising from



22.0 p.c. in 1951 to 78.1 p.c. in 1961. In the Prairie Region, Manitoba reported 90.2 p.c. of its farms with electric power, Alberta 72.3 p.c. and Saskatchewan 65.6 p.c., the latter proportion rising from only 16.3 p.c. in 1951. In British Columbia, 87.1 p.c. of the farms in 1961 reported electric power compared with 68.8 p.c. ten years previously.

Another indication of the growth in farm electrification is the extent to which electrical appliances are being used in farm homes. In 1961, 359,757 or 80.0 p.c. of all Canadian farm homes were equipped with a mechanical refrigerator (gas or electric), a proportion that rose from 21.9 p.c. in 1951. Also, 40.7 p.c. of the 449,553 farm homes reported a home freezer and 67.3 p.c. reported a television set.

Farm Capital.—Much has been said in recent years of the increasing capital requirements in agriculture and the correspondingly greater difficulty experienced by the beginner-farmer to become established on a farm of his own. This is borne out by the 1961 census data on capital values and, of course, reflects the trend toward larger farms. The capital value of all farms in Canada in 1961 totalled approximately \$13,200,000,000, an amount 39.1 p.c. higher than the 1951 value of \$9,500,000,000. The average capital value per farm was \$27,389 in 1961 compared with \$15,200 ten years earlier and the average value of farm land per acre was \$76 in 1961 as against \$54 in 1951.

The capital farm value for the Prairie Region was \$6,700,000,000 in 1961 which was the highest for any region in the country; the Central Region was second with a value of \$5,400,000,000. However, British Columbia had the highest average capital value per farm, amounting to \$32,967; this was followed in order by the Prairie Provinces at \$32,009, the Central Region at \$24,718 and the Atlantic Region at \$12,314 per farm.

For Canada as a whole, the proportion of capital value made up of real estate (land and buildings) increased during the 1951-61 decade from 58.4 p.c. to 65.5 p.c. The relative importance of livestock and poultry declined from 21.2 p.c. to 15.0 p.c. and that of machinery and equipment declined only fractionally to 19.5 p.c. British Columbia had the highest average real estate value in 1961, amounting to \$24,733 per farm, and the Prairie Provinces followed with \$20,393 per farm. The highest average value for machinery and equipment was reported by the Prairie Region at \$7,174, and also for livestock and poultry at \$4,442 per farm. The predominance of the Prairie Provinces in average capital values per farm reflects the large size of farms in this region. On the other hand, capital value per acre of farm land was lower for the Prairie Region than for the other regions.

Age and Residence of Farm Operator.—Some shifting in the relative importance of the various age groups for farm operators was shown during the 1951-61 period. In 1961, 16.7 p.c. of the farm operators were under 35 years of age compared with 21.7 p.c. in 1951. For the age group 45-59 years an opposite trend was shown—38.0 p.c. of the operators were in this group in 1961 compared with 33.3 p.c. in 1951. For the other age groups—35-44 years and 60 years or over—little change was shown, the 1961 proportions being 24.7 p.c. and 20.5 p.c., respectively.

In 1961, 88.3 p.c. of the farm operators reported that they lived on the farm the year round; the proportion was highest in the Atlantic Region (95.7 p.c.) and lowest in the Prairie Region (80.4 p.c.). Also, the proportion of operators classed as non-resident was highest on the Prairies, being 14.0 p.c. of all farms compared with a Canada average of 7.7 p.c. Included in this group in the Prairie Provinces were 29,359 farms, which represented 79.1 p.c. of all non-resident farms in Canada. In Saskatchewan, almost one in every five farms (19.2 p.c.) had a non-resident operator in 1961. This predominance of non-residency in the Prairie Provinces is associated with the type of farming that prevails in the region. Grain farming does not require as much close supervision as most other types with the result that a substantial number of the operators live in adjoining towns and villages and commute to the farm.

Farm Population and Labour Force.—The decreasing number of farms in Canada and the continuing substitution of farm labour by machines has resulted in a declining farm population and a smaller agricultural labour force. The total population on Canadian farms was reported at 2,128,400 persons in 1961 compared with 2,911,996 in 1951. The farm population represented 11.7 p.c. of the total population in 1961, down considerably from 20.8 p.c. in 1951. All provinces recorded decreases in farm population during the decade. In the Atlantic Provinces, the farm population made up 8.8 p.c. of the total population in 1961, ranging from a high of 33.2 p.c. in Prince Edward Island to a low of 2.4 p.c. in Newfoundland; in the Central Region, 9.7 p.c. of the total population was classified as farm population in 1961; in the Prairie Provinces, 24.1 p.c. with a high of 33.0 p.c. for Saskatchewan; and in British Columbia, 5.2 p.c.

A similar trend was shown for the agricultural labour force in relation to the total civilian labour force. For all Canada, the 1961 agricultural labour force totalled 648,966 persons and was 10.0 p.c. of the civilian labour force; the corresponding proportion in 1951 was 15.7 p.c. In 1961, the proportion for the three Prairie Provinces and Prince Edward Island exceeded the national average, whereas for the other provinces it was below the Canada average; Saskatchewan with 36.7 p.c. had the highest proportion. In all provinces the agricultural labour force was smaller in 1961 than it had been in 1951. However, the combined effect of the declining agricultural labour force, improved agricultural technology and increasing mechanization has resulted in a steadily upward trend in output per farm

worker. This is strikingly shown by the number of persons supported by one farm worker. It was estimated that 11 persons were supported by one farm worker in 1941, 15 persons in 1951, and 22 persons in 1956. By 1962, the estimate had increased to a high of 30 persons. As time goes on, output per farm worker is likely to continue to increase as improvements in technology and farm management practices together with greater mechanization and specialization displace more labour and as the output for each labour unit remaining in the industry increases. Thus, while the relative contribution of agriculture to the national economy can be expected to decrease and the number of farm operators to decline, the labour output of Canada's farms will rise and a better living standard will result for the smaller farm population.

Section 1.—Federal Government in Relation to Agriculture*

The federal Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines, Agriculture and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Territorial Division, Northern Administration Branch, Department of Northern Affairs and National Resources.

Subsection 1.—Services of the Department of Agriculture

Broadly speaking, the activities of the Department of Agriculture may be grouped under three headings: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests, the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover the sphere of soil and water conservation, price stability, provision of credit, rural rehabilitation and development and a degree of crop insurance and income security in the event of crop failure. The Department employs a staff of more than 10,000 persons.

The organization of the Department comprises three branches—Research, Production and Marketing, and Administration. Agencies closely allied with the Department and responsible to the Minister of Agriculture are the Farm Credit Corporation, the Board of Grain Commissioners and the Canadian Wheat Board (see p. 418 and Index).

Research Branch.—The Research Branch is the principal research agency of the Department. It conducts a broad program of scientific investigation covering both basic studies and practical attacks on agricultural problems. There are seven Research Institutes

* Prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

at Ottawa; two Research Institutes, ten Regional Research Stations, four Research Laboratories, 26 Experimental Farms and 20 Substations are located throughout the ten provinces and the Yukon and Northwest Territories.

The Research Branch serves all principal agricultural areas in Canada and co-ordinates its efforts with those of the National Research Council, universities and kindred agencies. One staff group is charged with the planning and co-ordination of the program and another with the administration required to carry it out. Four directors, representing divisions of animals, crops, soils, entomology and plant pathology, assist the programming of the work. Three research services—statistics, engineering, and analytical chemistry, located with the administrative and executive group at Ottawa—provide research groups across the country with specialized leadership and service and undertake critical researches or other creative work as required.

The Research Institutes are organized on a scientific rather than a problem basis and are engaged primarily on basic research of wide application to agriculture. They also carry out related national work such as the identification of plants, insects and pathogens. There are seven Institutes at Ottawa and one each at London and Belleville in Ontario.

The *Animal Research Institute* covers the fields of genetics and breeding, nutrition, physiology, biochemistry and management, and tackles problems in the production of milk, beef, lamb, pork, poultry, eggs, wool and fur. Studies are carried out at the *Plant Research Institute* in taxonomy, physiology, biochemistry, pathology, agrometeorology, weeds, and fruit and vegetable processing and storage. Cytological and genetic studies on cereal, forage, tobacco and horticultural plants are made by the *Genetics and Plant Breeding Research Institute* with special reference to problems encountered in the breeding programs and the assessment of quality characteristics. The *Soils Research Institute* studies genesis and classification, fertility, mineralogy and the organic, physiochemical and physical aspects of soils. This Institute gives leadership to the federal-provincial soil survey program through classification studies and by developing and standardizing analytical methods. It also provides a national soil-mapping service. A major section of the *Entomological Research Institute* deals with taxonomy, other assignments being in the fields of genetics, physiology, nematology and apiculture. The Institute assembles and maintains the national collection of insects. The *Microbiological Research Institute* is concerned mainly with metabolism, nutrition and genetics of bacteria of agricultural significance. The *Food Research Institute* conducts basic research on the characteristics of plant and animal products affecting food quality. The development of new principles of food processing and studies related to dairy technology are of major interest.

The *Pesticide Research Institute* at London examines chemicals used or intended to be used for insect, disease or weed control and investigates the reason for and the nature of the biological activity of the chemical. The *Biological Control Research Institute* at Belleville is concerned with efforts to control destructive insect pests and noxious weeds with parasitic and predaceous insects, and with insect disease organisms. It is also the principal importing centre for beneficial insects and for some disease organisms from foreign countries.

The Regional Research Stations and Laboratories cope with primary problems in various regions in all provinces. Other units have undertaken projects assisting in the exploitation of peat bogs, reclamation of marshland for pasture, prevention of soil erosion, dryland agriculture, the growing of special crops such as tobacco, and livestock breeding.

Production and Marketing Branch.—The Production and Marketing Branch conducts the promotional and regulatory functions of the Department. Its seven Divisions administer legislation and policies in the fields of agricultural production, marketing and control of disease in plants and animals. Three Sections—Markets Information, Consumer, and Transportation, Storage and Retail Inspection—carry on activities in their respective fields.

The *Health of Animals Division* administers the Animal Contagious Diseases Act, the Humane Slaughter of Food Animals Act and the Meat Inspection Act. The Division also operates laboratories for the study of animal diseases. Besides its responsibility in carrying out various disease prevention measures, the Division conducts programs for the eradication of bovine tuberculosis and brucellosis and issues health certificates for livestock entering export trade. The animal pathology laboratories, in addition to their research function, manufacture diagnostic reagents and biological products and provide analytical and diagnostic services for diseases of domestic and wild animals. District laboratories across the country give routine diagnostic and research services. The *Livestock Division* administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The *Poultry Division* carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products.

The *Fruit and Vegetable Division* administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of interprovincial and international brokers who deal in fresh fruits and vegetables. The *Dairy Products Division* is responsible for the administration of legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream. The *Plant Products Division* administers Acts and regulations respecting seeds, feedstuffs, fertilizers and pest-control products, conducts field inspections and maintains regional testing laboratories. The *Plant Protection Division* is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

The *Markets Information Section* compiles and distributes market information respecting livestock, meats and wool, dairy products, eggs and poultry, and fruits and vegetables. The *Consumer Section* helps to promote proper use of Canadian agricultural food products through experimental work, carried on by its home economists, on the cooking of foods and the preserving of perishables. The *Transportation, Storage and Retail Inspection Section* administers the payment of subsidies for the construction of public cold storage facilities. Cargo inspectors at the main Canadian ports check the handling of goods moving to export. Other inspectors in the principal marketing areas make spot checks on retail outlets to see that food products meet the prescribed standards of quality and grade.

Administration Branch.—In addition to its general responsibility for the business management of the Department, the Administration Branch embraces the Divisions concerned with Economics and Information. Administration of the rehabilitation and assistance programs is also associated with this Branch.

The *Economics Division* collects, analyses and interprets economic information required to form and administer departmental policies and programs. It conducts economic surveys and research designed to improve agricultural production, marketing, and farm living conditions. The Division acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, assisting in any economic undertaking with which the Department is concerned.

The *Information Division* gathers and publishes information arising from research work and the development and regulatory programs of the Department. It employs all the recognized media—printed publications, press and radio releases, motion pictures and television. In addition, the Division operates the central library of the Department and a system of field libraries located at major research centres of the Department across Canada.

Subsection 2.—Farm Assistance Programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income. In pursuit of these objectives, the Department of Agriculture has carried on, over a long period, a program designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations such as the Prairie Farm Rehabilitation Act (see p. 433) to deal with the results of the drought in the 1930's; the Prairie Farm Assistance Act (p. 421) to mitigate the effects of crop failure; and the Maritime Marshland Rehabilitation Act (p. 437) to save valuable soil in the Maritime Provinces.

Although much has been accomplished by these measures, changing conditions have dictated the need for a new approach. In the past two decades agriculture has undergone revolutionary changes. Large-scale mechanization, increasing farm size coupled with declining farm numbers, and shrinking world markets have called for a reappraisal of policy, resulting in a number of legislative enactments in the agricultural field. These cover such matters as credit provision, price stability, crop insurance, resource development, and policies to assist regional groups to catch up with the national level of progress; they are described individually below. In addition, legislation has been passed from time to time giving assistance to meet temporary or short-term contingencies, such as the Western Grain Producers' Acreage Payment Regulations which, following the drought in 1957, provided for the payment to each grain producer of \$1 for each acre seeded in 1958 up to an amount of \$200; and the Prairie Grain Loans Act which provided for short-term credit to grain producers of the Prairie Provinces to meet temporary difficulties encountered during the 1959-60 crop year from inability to thresh their grain.

The Farm Credit Act.—The Farm Credit Act (SC 1959, c. 43, proclaimed on Oct. 5, 1959) established the Farm Credit Corporation as successor to the Canadian Farm Loan Board. The Corporation, which is a self-supporting Crown corporation, reports to Parliament through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans. Under Part II of the Act the Corporation may lend up to 75 p.c. of the appraised value of the farm land taken as security, or \$20,000, whichever is the lesser, repayable within a period of up to 30 years. Under Part III of the Act, the Corporation is empowered to make loans of up to 75 p.c. of the value of the farm land and chattels taken as security, or \$27,500, whichever is the lesser, to young farmers aged 21 to 44, inclusive, who have at least five years of experience in farming; that portion of the loan secured by farm land is repayable within a period of up to 30 years and that portion (if any) based on chattel security must be repaid within the first ten years. A Part III loan is further secured by mandatory insurance upon the life of the borrower, and his farming operations are subject to supervision by the Corporation until the loan has been reduced to 75 p.c. of the appraised value of the farm land. Similar insurance coverage is available to Part II borrowers on an optional basis. The interest rate on all loans is fixed by the Act at 5 p.c. In 1962, after three years of operation under the terms of the original Farm Credit Act, amendments were made to the Act and Regulations to provide a greater measure of flexibility in meeting the bona fide credit needs of Canadian farmers.

The Corporation has 127 field areas administered by 164 credit advisers who are responsible for informing local farmers about the services available for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

Funds for lending are borrowed at current interest rates from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation, which has been fixed by the Act at \$16,000,000.

In the year ended Mar. 31, 1963, the Farm Credit Corporation approved 7,438 loans for a total of \$90,924,300 as compared with 5,835 loans for a total of \$68,574,850 in the preceding year; the total amount of principal outstanding on loans was \$270,277,265 (secured by 37,462 first mortgages and 13 second mortgages) as compared with \$212,138,307 the previous year.

1.—Loans Approved and Disbursed under the Canadian Farm Loan Act¹ and the Farm Credit Act, Years Ended Mar. 31, 1954-63

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year Ended Mar. 31—	Loans Approved		Loans Paid Out	Year Ended Mar. 31—	Loans Approved		Loans Paid Out
	No.	\$	\$		No.	\$	\$
1954.....	2,091	7,816,750	7,000,539	1959.....	4,805	30,144,950	28,368,265
1955.....	2,145	8,225,500	8,207,002	1960.....	5,339	40,031,250	35,840,882
1956.....	2,057	8,309,650	8,254,322	1961.....	5,597	60,704,050	52,305,265
1957.....	2,921	13,978,700	13,183,992	1962.....	5,885	68,574,850	68,886,875
1958.....	3,702	21,278,450	19,343,560	1963.....	7,438	90,924,300	78,428,094

¹ Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

2.—First Mortgage Loans Approved under the Canadian Farm Loan Act¹ and the Farm Credit Act, by Province, Years Ended Mar. 31, 1961-63

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Province	1961		1962		1963	
	No.	\$	No.	\$	No.	\$
Newfoundland.....	—	—	1	6,100	1	20,000
Prince Edward Island.....	90	598,000	113	733,200	122	929,300
Nova Scotia.....	20	264,500	41	499,900	60	692,200
New Brunswick.....	46	362,050	111	1,109,700	101	1,192,500
Quebec.....	106	1,646,550	109	1,786,100	804	11,434,700
Ontario.....	1,590	19,151,700	1,383	17,104,400	1,526	20,144,700
Manitoba.....	317	3,481,300	429	5,024,000	479	5,390,500
Saskatchewan.....	2,008	19,014,550	1,936	19,812,350	2,307	23,271,700
Alberta.....	1,217	13,182,600	1,518	18,447,600	1,722	22,834,200
British Columbia.....	203	3,002,800	244	4,051,500	316	5,014,500
Totals.....	5,597	60,704,050	5,885	68,574,850	7,438	90,921,300

¹ Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

The Farm Improvement Loans Act.—The Farm Improvement Loans Act (RSC 1952, c. 110), administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electric system, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. The latest extension was for the period commencing July 1, 1962 and ending June 30, 1965. Under that extension, full-time beekeepers are made eligible for loans and the maximum loan or amount available at any one time to a borrower is \$7,500. The maximum term of a loan and the interest rate remain at ten years and 5 p.c. simple interest, respectively. The borrower is required to provide from 10 p.c. to 40 p.c. of the cost of his purchase or project, depending on the

loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$400,000,000. By Dec. 31, 1961, 1,984 claims amounting to \$1,356,196 had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one-tenth of one per cent after recoveries have been taken into account.

By the end of 1961, \$928,088,913 or 82.7 p.c. of the total loans made had been repaid. The position at that time was as follows:—

Period	Loans Outstanding	P.C. of Total Loans Outstanding
1945-48.....	449	0.01
1948-51.....	59,781	0.05
1951-53.....	306,895	0.17
1953-56.....	1,336,139	0.60
1956-59.....	13,902,386	5.82
1959-62 (current period).....	178,234,964	60.70
TOTALS.....	193,840,614	17.30

3.—Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1960 and 1961, with Cumulative Totals from 1945

Purpose and Province	1960		1961		Cumulative Totals 1945-61	
	Loans	Amount	Loans	Amount	Loans	Amount
Purpose	No.	\$	No.	\$	No.	\$
Purchase of agricultural implements.....	52,811	79,942,352	50,483	76,486,097	779,482	943,550,919
Construction, repair or alterations of, or making additions to any buildings or structure on a farm.....	5,196	10,064,430	7,080	15,410,464	59,341	90,606,743
Purchase of livestock.....	7,744	9,624,919	9,547	12,675,959	62,416	64,054,750
Works for the improvement or development of a farm designated in the regulations.....	1,558	1,312,991	2,545	2,234,332	24,240	16,753,231
Irrigation systems.....	152	277,889	242	466,494	829	1,471,781
Purchase and installation of agricultural equipment or a farm electric system and the alteration and improvement of a farm electric system.....	404	470,996	499	664,033	5,539	4,192,744
Erection or construction of fencing or works for drainage on a farm.....	176	162,169	219	209,786	1,627	1,299,359
Totals.....	68,041	101,855,746	70,615	108,147,165	933,474	1,121,929,527
Province						
Newfoundland.....	49	73,567	52	96,422	489	667,656
Prince Edward Island.....	1,127	1,407,752	1,070	1,412,121	14,289	14,493,351
Nova Scotia.....	644	858,137	749	1,072,111	10,345	10,599,893
New Brunswick.....	654	1,022,908	672	1,086,611	8,791	10,351,364
Quebec.....	8,450	13,019,863	11,126	18,101,149	101,653	130,679,421
Ontario.....	11,881	18,737,174	13,851	22,902,035	147,405	185,887,329
Manitoba.....	7,519	11,010,932	6,650	9,545,129	110,030	125,672,966
Saskatchewan.....	19,242	28,222,359	15,302	21,302,293	262,945	315,237,508
Alberta.....	16,717	24,637,398	18,951	28,519,693	250,705	295,172,192
British Columbia.....	1,758	2,865,656	2,192	4,109,601	26,842	33,167,347

Prairie Grain Advance Payments Act.—This Act, which came into force on Nov. 25, 1957, provides for an advance payment to producers for threshed grain (wheat, oats and barley) in storage other than in an elevator and prior to delivery to the Canadian Wheat Board, exclusive of grain deliverable under a unit quota. Advance payments of 50 cents per bu. of wheat, 20 cents per bu. of oats and 35 cents per bu. of barley are made, subject to certain restrictions as to quota and acreage. Maximum advance payment per application is \$3,000. At Dec. 31, 1961, the following advance payments had been made:—

<i>Period</i>	<i>Applications</i>	<i>Total Advance</i>	<i>Average Advance</i>
	No.	\$	\$
Aug. 1, 1957—July 31, 1958.....	50,412	35,203,467	698
Aug. 1, 1958—July 31, 1959.....	45,341	34,369,653	758
Aug. 1, 1959—July 31, 1960.....	50,047	38,492,505	769
Aug. 1, 1960—July 31, 1961.....	76,089	63,912,550	839
Aug. 1, 1961—July 31, 1962.....	22,342	16,656,713	745
Aug. 1, 1962—Dec. 28, 1962.....	36,789	27,764,402	754

Repayment is effected by deducting 50 p.c. of the initial payment for all grain delivered subsequent to the loan, other than for grain delivered under a unit quota. The amounts deducted are paid to the Board until the producer has discharged his advance. At Dec. 31, 1962, refunds had been made as follows:—

<i>Period</i>	<i>Total Refunded</i>	<i>Total Advance Outstanding</i>	<i>Percentage Refunded</i>
	\$	\$	
Aug. 1, 1957—July 31, 1958.....	35,197,943	5,524	99.9
Aug. 1, 1958—July 31, 1959.....	34,358,066	11,587	99.9
Aug. 1, 1959—July 31, 1960.....	38,473,908	18,597	99.9
Aug. 1, 1960—July 31, 1961.....	63,784,910	127,640	99.8
Aug. 1, 1961—July 31, 1962.....	16,156,093	500,620	96.9
Aug. 1, 1962—Dec. 28, 1962.....	11,586,868	16,177,534	41.7

Prairie Farm Assistance Act.—The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. Its purpose is to assist in dealing with a relief problem which the provinces and municipalities cannot do alone and to enable the farmers to put in a crop the following year. Payments for the 1961 crop, as at July 31, 1962, totalled \$53,988,705; total payments made under the Act since 1939 amounted to \$314,829,673.

Payments are made from the Prairie Farm Emergency Fund to which farmers contribute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. The additional funds required are provided from the federal treasury. The total collected through the 1-p.c. levy in 1961 was \$6,839,498. The total amount collected since 1939 was \$139,092,707.

The average yield of wheat in a township or block of sections is the basis on which payments are made. If the average yield is eight bushels per acre or less, all farmers within that area receive payments except those on the sections having a yield of 12 or more bushels per acre. The smallest isolated block eligible for payment is one third of a township (12 sections), provided such block is rectangular in shape. A block as small as one section within an ineligible township is eligible for payment if a side lies along the boundary of an eligible township.

If an area consisting of one third or more of the cultivated lands in any six or more adjoining sections could not be seeded or summerfallowed because of flooding or other natural causes beyond the control of the farmers, such area is eligible for award at \$4 per acre on one half of the cultivated acreage of each farmer. Only those farmers who make

their homes and are ordinarily resident in the spring wheat area are eligible for award and no award can be made with respect to more than 200 acres of the cultivated land of a farmer.

There are three categories of payments: (1) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than five and not more than eight bushels per acre, the payment is \$2 per acre on one half of the total cultivated acreage of the farmer; (2) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is more than three and not more than five bushels per acre, the payment is \$3 per acre on one half of the total cultivated acreage of the farmer; (3) if the average yield of wheat for the township or block of sections, excluding those sections having a yield of 12 or more bushels per acre, is three bushels or less per acre, the payment is \$4 per acre on one half of the total cultivated acreage of the farmer.

In the zero-to-five-bushel categories the minimum payment is \$200, although a farm must have at least 25 acres under cultivation other than land that is seeded to grass, or be in the development stage, to qualify for this minimum award.

The Crop Insurance Act.—To assist in making the benefits of insurance protection on crops available in all provinces, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative for establishing schemes to meet their own regional requirements rests with the provinces. Schemes may be organized on the basis of specific crops or areas within the provinces and agreements between the provinces and the Federal Government set out the terms of insurance coverage.

Contributions from the federal treasury are limited to 50 p.c. of the administrative costs incurred by a province and 20 p.c. of the amount of premiums paid in any year. In addition, the Federal Government may make loans to any province equal to 75 p.c. of the amount by which indemnities required to be paid under policies of insurance exceed the aggregate of: the premium receipts for that year; the reserve for the payment of indemnities; and \$200,000. Those farmers who take advantage of an insurance scheme set up under the Act are not eligible for any payments under the Prairie Farm Assistance Act, nor are they required to pay the 1-p.c. levy on grain sales as provided for under that Act.

As at Dec. 31, 1962, three provinces—Manitoba, Saskatchewan and Prince Edward Island—had passed crop insurance legislation. Manitoba operated a test area scheme in 1960, 1961 and 1962; in 1962 some 4,500 farmers in the province purchased insurance with a total liability of \$10,000,000. Saskatchewan operated a test scheme in 1961 and 1962; in 1962, 1,350 farmers participated in the scheme and provision was made for the Provincial Crop Insurance Board to accept liability for \$5,000,000 coverage in 1963. Prince Edward Island operated an insurance scheme for potato crops in 1962 and planned to extend the scheme in 1963 to provide coverage for grain crops.

The Agricultural Stabilization Act.*—The Agricultural Stabilization Act (SC 1958, c. 22, proclaimed Mar. 3, 1958) established the Agricultural Stabilization Board which is empowered to stabilize the prices of agricultural products in order to assist the agricultural industry in realizing fair returns for its labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support the price of nine named or mandatory commodities (cattle, hogs and sheep; butter, cheese and eggs and wheat, oats and barley produced outside the prairie areas as defined in the Canadian Wheat Board Act) at not less than 80 p.c. of the previous ten-year average market, or base, price. Other commodities may be supported at such percentage of the base price

* This Act repealed the Agricultural Prices Support Act, 1944.

as may be approved by the Governor in Council. The Board may stabilize the price of any product in one or more of three ways: by an offer-to-purchase; by a deficiency payment; or by making such payment for the benefit of producers as may be authorized.

The price stabilization program in stabilizing prices of certain commodities by means of deficiency payments has been useful in assisting the agriculture industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. Examples of this are hogs and eggs. The institution of limited deficiency payments by the Board assisted in a necessary adjustment of production in a relatively short time. During the period of adjustment the Board guaranteed a minimum average return to producers for a limited quantity of product.

The Agricultural Stabilization Board has available a revolving fund of \$250,000,000. Any losses incurred through the Board's operations are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. Assisting the Board in its operations is an Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations.

The Agricultural Rehabilitation and Development Act.—This Act, introduced in 1961, is an important element in national agricultural policy and national resources management policy. It is designed to increase income in the rural areas of Canada and promote better land use and soil and water conservation. The Act authorizes the Federal Government to enter into agreements with provincial governments for the joint undertaking of: (1) projects for the alternative use of lands classified as marginal or of low productivity; (2) projects for the development of income and employment opportunities for rural agricultural areas; and (3) projects for the development and conservation of soil and water resources of Canada.

The alternative uses of land contemplated for lands unsuitable for profitable cultivation include programs for tree planting and farm woodlot management, grassing and pasturage, and recreational uses of various types, including public shooting areas and wildlife management areas. The program envisages the creation of new income opportunities for people in rural areas through the use of the rural development concept. It is proposed that studies be conducted of the economic development factors in local areas, and committees of local people will be involved in proposed development plans for their areas. Through the development plan, government assistance will be focused on helping local people to develop new and expanded income opportunities.

The conservation of soil and water resources for agricultural purposes, the third major objective of the legislation, is not new. For years, activities under the Prairie Farm Rehabilitation Act and the Maritime Marshland Rehabilitation Act have been directed toward this end but these are regional undertakings. Under the Agricultural Rehabilitation and Development Act, soil and water conservation as an aid to agriculture will be extended to cover the whole country so that it will be possible for agriculture throughout Canada to enjoy the benefits of federal assistance on resource conservation.

The Act also authorizes the Federal Government to carry on broad-scale research and it is proposed to conduct basic research on national land-use needs and rural adjustment trends. Toward the end of 1961, a Director of the Act was appointed and discussions were held with all the provinces on projects and programs leading to federal-provincial agreements.

By October 1962, the general ARDA agreement had been signed by all ten provinces and by mid-1963, with ARDA in its first full season of operation, 163 projects were under way in rural areas across the country, at a total cost of about \$7,000,000. An example of the type of project launched is a detailed land-use survey in Newfoundland. At present, arable land is too scarce to supply local demands for vegetables and the survey will provide an inventory of available farm and garden land. Other ARDA projects include: a community pasture at Wanham, Alta.; a major research program in Saskatchewan to discover sound principles for broad rural development programs; a rural development research

program in Manitoba's interlake region; research around Burlington, Ont., on the problem of urban expansion in farming regions; stream development projects in Quebec for land reclamation and a scheme for setting up an experimental maple grove to demonstrate syrup and sugar production techniques; advisory services for woodlot management in New Brunswick and a resettlement project in the Bay of Chaleur area; a large program of surface ditching, land clearing and rural pond construction in Nova Scotia; and development of recreational areas on submarginal land in Prince Edward Island. Discussions were being held with British Columbia officials on a number of soil and water conservation projects for flood control and land reclamation in river valleys.

Section 2.—Provincial Governments in Relation to Agriculture*

Subsection 1.—Agricultural Services

Newfoundland.—Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines, Agriculture and Resources. The Division is in charge of a Director who is assisted by a staff of 21 officers. For purposes of administration, the province is divided into nine districts. A fieldman with permanent headquarters is located in each district except Labrador, where the officer is resident for the summer only. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of \$125 an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them. Small fruit development is promoted through the distribution of quality foundation stock.

Every encouragement is given to the production of livestock. An experimental sheep flock is maintained. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. A veterinary supervises the health of animals program and the joint federal-provincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the 4-H Club movement in the province and accepts responsibility for all projects pertaining to agriculture.

Prince Edward Island.—The activities of the provincial Department of Agriculture are suggested by its staff which includes, in addition to the Minister and Deputy Minister, a Dairy Superintendent and Assistant, two Check Testers, three Dairy Herd Improvement Promoters, a Director of Veterinary Services and ten subsidized practising veterinarians, a Livestock Director, a Marketing Director, a Horticulturist, a Soil Analysis Assistant, a Poultry Fieldman, an Economist, two Agronomists, a Director of 4-H Clubs, three Agricultural Representatives, a Nursery Supervisor, and a Director, an Assistant Director and two Extension Workers of Women's Institutes.

Nova Scotia.—The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association various agricultural co-operative organizations, credit unions and producer organizations. The Department is assisted by the Nova Scotia Advisory Committee on Agricultural Services which has been established to promote agricultural policies and projects of the

* Information supplied by the agricultural authorities of the various provinces.

federal and provincial Departments of Agriculture. The Committee meets quarterly to determine how the work of these Departments may be co-ordinated and directed through integrated agricultural policies and with minimum duplication of services.

New Brunswick.—Provincial government agricultural policy in New Brunswick is directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by a Deputy Minister and the Directors of the following Branches: extension, livestock, dairy, veterinary, poultry, horticulture, field husbandry, potato and plant protection, agricultural engineering, home economics, credit union and co-operative, and agricultural education.

Quebec.—The Quebec Department of Agriculture and Colonization comprises seven large services: production and marketing; farm management; research, education and information; rural engineering; colonization; administration; and rural planning (ARDA). Each service has divisions and sections, each dealing with particular problems.

In addition, various special organizations are under the jurisdiction of the Department: the Agricultural Marketing Board, the Farm Credit Bureau, the Rural Electrification Bureau, the Veterinary Science School, the Quebec Sugar Refining (St. Hilaire), the Deschambault Farm School, the Artificial Insemination Centre for Cattle (St. Hyacinthe), the Provincial Dairy School (St. Hyacinthe), the Dairy Industry Commission and the Agricultural Research Council. The latter is an advisory body composed of representatives of the agricultural institutions, of the federal and provincial Departments of Agriculture and of agricultural organizations. It does not operate laboratories but promotes research in all fields of agriculture through grants paid to agricultural faculties in the province; such research projects are supervised by university personnel. The Council also conducts a program of bursaries to induce graduates in scientific agriculture to pursue specialized studies. The findings of research projects sponsored by the Department are published in *Recherches agronomiques*.

The agricultural co-operative movement is very extensive in Quebec: 467 co-operatives have 70,769 members, 87 agricultural societies have 28,078 members, and 369 agricultural clubs have 17,217 members; 751 farm women's clubs have a total membership of 40,000 women and young girls; and there are 145 young farmers' clubs with a membership of 3,300 boys and 1,315 girls.

Every year a competition is held for the Agricultural Merit Order to ascertain the personal merit of the farmers who have most distinguished themselves in the agricultural field and can serve as examples. The annual competition is held successively in the five regions into which the province is divided. Each contest lasts five years and covers the various farm enterprises of the competitor. County Farm Improvement Contests have also been held for 30 years at the county and parish level; they tend to promote better methods of culture and farm management and to increase farm income. By early 1963, 8,500 farmers had benefited from them.

Ontario.—The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, 11 branches and two Experimental Farms, and through research and extension work conducted under the direction of the Ontario Research Institute as well as that under way at the Ontario Agricultural College, the Ontario Veterinary College, Macdonald Institute, Western Ontario Agricultural School, Kemptonville Agricultural School and the Horticultural Experiment Station.

The administration of the Department is under the supervision of a Deputy Minister with the assistance of two Assistant Deputy Ministers. The Ontario Agricultural College, the Ontario Veterinary College and Macdonald Institute (the Federated Colleges of Ontario) report to the Minister and Deputy Minister. The Research Institute is the responsibility of the Director of Research who, in turn, reports to the Deputy Minister. During 1962 a new office was established to develop programs under the Agricultural

Rehabilitation and Development Act of Canada. The Department is charged with the supervision of the agricultural schools, the Ontario Telephone Service Commission, the Accounts Branch and Personnel.

The Marketing Division is responsible for the administration of the Co-operatives Branch, the Dairy Branch, the Market Development Branch, the Farm Products Inspection Service and the Farm Labour Committee. The services of the Co-operatives Branch are designed to encourage and assist co-operatives to operate sound and successful businesses under the control of their members; it also administers the Co-operatives Loans Act. The Dairy Branch provides an inspection, instruction and supervision service to all dairy factories and promotes the production of clean milk on farms. The Milk Industry Board of Ontario, functioning under the authority of the Milk Industry Act, regulates and supervises the marketing of milk and cream. The Market Development Branch seeks to widen markets for Ontario farm products both domestically and abroad.

The Division of Production and Extension administers the Extension Branch, Live Stock Branch, Farm Economics and Statistics Branch, Agricultural and Horticultural Societies Branch, Demonstration Farms, and the Field Crops Branch. Through a staff of Agricultural Representatives, one of whom is located in each county and district, the Extension Branch carries on an educational and extension service, and gives leadership to 4-H Club work and to the Ontario Junior Farmers' Association. It also provides assistance to farmers and settlers in northern Ontario in connection with land clearing and breaking and improvement of farms and livestock. The Home Economics Service, which is part of the Extension Branch, gives leadership to organized activities of rural women. The Live Stock Branch promotes livestock improvement policies with particular attention to the health of animals, gives support to purebred livestock associations, licenses artificial insemination centres, community sales, wool warehousemen and egg grading stations. The Farm Economics and Statistics Branch carries on research in farm business including cost analysis, marketing and land use; in co-operation with the Dominion Bureau of Statistics it gathers and publishes statistics of agricultural production. The Agricultural and Horticultural Societies Branch provides assistance to agricultural and horticultural fairs and exhibitions, ploughing matches and other competitions and administers the Community Centres Act. Demonstration Farms in northern Ontario, one at New Liskeard and another at Sault Ste. Marie, are operated for the demonstration of methods adaptable to the area concerned, present emphasis being on beef cattle production. The Field Crops Branch assists in the development of good cultural practices, promotes the use of improved strains of seed and works for the improvement of pastures; it also administers the Weed Control Act.

The Research Institute co-ordinates all research activities of the province's agricultural schools and colleges in addition to developing a thorough research program in the interests of agriculture and industry associated with agriculture.

Manitoba.—The Department of Agriculture and Conservation serves Manitoba through the following branches: agricultural extension; livestock; dairy; soils, crops and weeds administration; agricultural publications, statistics and radio and information service; co-operative services; the provincial veterinary laboratory; and water control and conservation.

The Extension Service deals with agricultural economics, horticulture, poultry, agricultural engineering, entomology and beekeeping, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days, and short courses are held. Thirty-seven agricultural representatives and six assistants are located in 35 offices in the province, each serving from one to five municipalities; 14 home economists serve designated areas.

The Live Stock Branch administers the Animal Husbandry Act, develops and administers policies that encourage the improvement and production of livestock, and works in close co-operation with the Veterinary Laboratory Service and the federal Health of Animals Division in the control of livestock diseases.

The Dairy Branch administers the Dairy Act, supervises the grading of cream, inspects creameries and cheese factories, gives instruction in cheese and butter making, issues licences to makers of dairy products and to cream graders and conducts a dairy-cost study among milk producers. Extension activities include addressing meetings and preparing articles and leaflets on dairy farm problems.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage and special crops, and promotes proper land use through soil conservation programs. Also, weed control is co-ordinated through administration of the Noxious Weeds Act. The Branch develops and administers policies that encourage good field crop husbandry, soil conservation and weed control, and co-operates with other agencies toward this end.

The Agricultural Publications and Statistics Branch publishes and distributes annually approximately 125,000 bulletins, circulars, posters, leaflets, etc. It provides the public with agricultural statistics relating to Manitoba agriculture, and maintains an information service which uses the media of the press, radio and TV.

The Co-operative Services Branch takes care of the registration and supervision of co-operatives and credit unions and the administration of the Acts governing them. It also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Laboratory operates a diagnostic laboratory for animal diseases, the services of which are available to veterinarians and livestock owners.

The Water Control and Conservation Branch administers, through the Water Rights and the Water Power Acts, the water resources of the province and all works in connection with the control and utilization of those resources. Through the Departmental Act and other associated statutes, provision is made for the construction of works to control and use water, and to provide technical and financial assistance to local governments for the construction, maintenance, and operation of such works. Under the direction of the director and chief engineer, the Floodway Division is responsible for co-ordinating all matters in respect to design and construction of the proposed Red River Floodway.

Saskatchewan.—The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Secretary of Statistics collects data on crop conditions, production, marketings and income. Farm information is dispensed daily over private radio stations, over TV stations and to the press by the Radio and Information Division. The Agricultural Representative Service has a technical staff comprising a director, an assistant director, 40 agricultural representatives and three assistants, four area supervisors, five farm management specialists and one audio-visual aids supervisor. This extension field staff serves all branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services; they work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information. District Boards with representatives from each Committee assist the agricultural representative in planning and developing a district agricultural improvement program. Through an Earned Assistant Program, the Department pays one half the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Department of Labour and the National Employment Service in directing annual movements of farm labour in and out of the province.

The Animal Industry Branch employs livestock specialists who provide technical information through Agricultural Representatives, press, radio and directly to producers and who administer the ROP program for beef cattle. For administrative purposes, the Branch has four divisions: the Dairy Division administers dairy herd improvement programs, assists producers with management and production problems, inspects and licenses dairy manufacturing and frozen-food locker plants, and administers dairy, locker plant

and margarine legislation; the Livestock Division encourages the use of suitable animals for breeding purposes by the establishment of purebred sire areas and by assistance in the purchase and distribution of bulls, boars and rams, and registers brands, licenses livestock dealers and agents and promotes programs on insect control, feeding and management; the Poultry Division maintains poultry and turkey testing and banding services under Saskatchewan Hatchery Supply Flock Policies, licenses produce dealers and poultry buyers, hatcheries and hatchery agents, assists with poultry shows and field days, and otherwise promotes flock improvement; the Veterinary Division assists students in veterinary science under a scholarship plan, administers the Veterinary Service District Act and the calfhood vaccination program, provides a laboratory service for the livestock and poultry industries and co-operates with Federal Government officials and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and projects. Reclamation of land by drainage, development of misused land and under-utilized land, and construction of provincial community pastures all come within its jurisdiction. The Branch provides engineering assistance to conservation and development areas, water users' districts, and irrigation districts in connection with water control projects. The Water Rights Division of the Branch is responsible for the administration of the ground and surface water of the province and provides for regulated use of water for domestic, municipal, industrial, irrigation, water power, recreation, wildlife and other purposes.

The Lands Branch administers Crown and Land Utilization Board lands, except forest reserves and parks in the settled area of the province; classifies it according to the use for which it is best suited; disposes of such lands under long-term leases; secures land control for land utilization projects; supervises new settlement projects; pays for clearing and breaking by farmers on provincial leases; and operates provincial community pastures. Cultivated Crown lands may be purchased by lessees.

The Plant Industry Branch organizes and administers programs for crop improvement and crop protection, and advises on seed and crop improvement, soil conservation, horticultural problems, and weed and pest control. The improvement of grassland is promoted through a forage crop program. The Seed Plant Division carries on custom cleaning of forage seeds and registered cereals. The Apiary Division advises on beekeeping and honey production and conducts continuous inspection.

The Agricultural Machinery Administration carries out detailed tests on agricultural machines being sold in Saskatchewan to evaluate their structural and functional performance; results are made available to the public. The Administration is also responsible for the inspection and licensing of farm implement vendors within the province. Investigations are made into complaints arising out of machinery purchase and use with a view to equitable settlement without the necessity of litigation. Further services direct to the public are provided through an agricultural machinery extension program.

The Family Farm Improvement Branch assists farmers by providing technical services, materials, construction services, and financial assistance with farmstead development. The Branch specializes in such farmstead problems as buildings, water and sewage works, household problems, and materials handling.

Alberta.—The Alberta Department of Agriculture is organized in the following branches and services.

The Field Crops Branch administers programs and policies relating to crop improvement, soil conservation and weed control, crop protection and pest control, horticulture and apiculture. Agricultural Service Boards have been organized in municipal districts to assist with agricultural programs, and the Department of Agriculture is represented on each Board.

The Live Stock Branch aids in maintaining the quality of herds and flocks by assisting farmers in securing purebred herd sires and assists artificial breeding associations in the breeding of dairy cattle. The Branch also supervises livestock feeder associations and administers legislation relating to stock inspection, brands, domestic animals and the sale of horned cattle.

The Dairy Branch administers the Dairymen's Act and the Frozen Food Locker Act. Grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation, and temperature control for dairies and frozen-food lockers. A regular cow-testing service is available to dairy producers and the Branch laboratory conducts chemical and bacteriological analyses needed for industrial directives. Yearly cost studies and dairy farm management services are in operation in the principal milk-producing areas.

The Poultry Branch carries on programs for the improvement of poultry husbandry and supervises flock approval for the control of pullorum disease. The Branch issues hatchery, wholesale, first receiver and trucker licences for the handling of poultry products.

The Veterinary Services Branch provides scientific diagnoses of livestock and poultry diseases through its laboratory; conducts investigations of disease conditions; lectures in veterinary science at the University of Alberta, Schools of Agriculture, and many meetings; and promotes government policies aimed at reducing losses throughout the province.

The Agricultural Extension Service operates 44 offices and employs the services of 61 district agriculturists and 21 district home economists. The district agriculturists assist farmers with their problems and advance departmental policies designed to improve the standard of agricultural practices. The district home economists provide a similar service for farm women. Bulletins are prepared dealing with agricultural and home economics topics. The Branch is responsible for the supervision of agricultural societies and, in co-operation with the federal Department of Labour, is concerned with recruitment and placement of farm labour.

The Fur Farms Branch administers the licensing and exporting of live animals and pelts, and assists fur farmers in care, management and stock improvement; the Radio and Information Branch conducts five broadcasts a week over seven radio stations and issues weekly bulletins to press and radio; the Water Resources Branch deals with water rights, drainage, irrigation, and water power development; the Lands and Forests Utilization Committee (composed of representatives from the Department of Lands and Forests, Power Commission, Department of Municipal Affairs, University of Alberta and Department of Agriculture) deals with the proper use of submarginal agricultural land; and the Farm Economics Branch, formed Jan. 1, 1961, studies various economic farm problems and advises farmers on management techniques.

Credit is made available to young farmers for the purchase of farm lands under the Farm Purchase Credit Act and the Farm Home Improvement Act. Schools of Agriculture and Home Economics are operated at Olds, Fairview and Vermilion (see p. 432).

British Columbia.—The Department of Agriculture has four main branches. The Administrative Branch is responsible for the general direction of agricultural policies, the administration of legislation affecting agriculture and the compilation of reports and publications. This Branch also maintains direct supervision of the Field Crops, Soil Survey, Plant Pathology, Entomology, Apiary, Markets and Statistics, Farmers' Institutes and Women's Institutes Branches.

The Livestock Branch engages in the promotion and supervision of the livestock industry and provides veterinary services affecting disease control regulations; its work also includes supervision of stock brands, inspection of dairy and fur farm premises, and inspection of beef grading. In addition, the Branch supervises the operations of the Dairy Branch in the inspection of commercial dairy premises. Officials are stationed at 11 centres throughout the province.

The Horticulture Branch supervises fruit, vegetable and seed production, and provides advice on plant diseases and insect pest control. The Branch maintains field offices at 10 points in the southerly section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 19 offices which cover all major farming districts. In addition this Branch provides agricultural engineering service, supervision of the government land-clearing program and farm labour services, and promotes junior club projects. The Poultry Branch offers extension services to the poultry industry.

Subsection 2.—Agricultural Colleges and Schools

All provinces provide facilities or assistance for training in agricultural science at university level. The colleges and schools are administered by either the Department of Agriculture or the Department of Education of the respective province.

Newfoundland.—There are no agricultural colleges in the province but the Agriculture Division of the Department of Mines, Agriculture and Resources provides a number of scholarships annually for young men to attend agricultural colleges in other provinces.

Prince Edward Island.—A two-year course in scientific agriculture offered at Prince of Wales College, Charlottetown, prepares students for third year at Macdonald College, Que. In the Vocational School, short courses provide knowledge and skill in agricultural pursuits and develop in the student a sense of the dignity and importance of agriculture as a calling and an understanding of the value of the industry to the province.

Nova Scotia.—The Nova Scotia Agricultural College at Truro offers two courses—the first two years of a degree course in agriculture and a two-year course in vocational agriculture. The College assists in conducting short courses at various provincial centres, supports Folk Schools and gives direction to 4-H Clubs, Women's Institutes and other junior and senior production and marketing organizations. Tuition is free for Canadian students.

New Brunswick.—The three agricultural schools of New Brunswick are located at Woodstock, St. Joseph and St. Basile, each offering a two-term agricultural course extending over five months in the year. The curriculum includes training in all phases of agriculture, shop and general academic work. Ten-month home economics courses are also offered at Woodstock and St. Joseph.

Quebec.—Laval University (at Quebec) and McGill University (Macdonald College at Ste. Anne de Bellevue) offer courses leading to a degree of Bachelor, Licentiate, Master or Doctor of Science in Agriculture and the Provincial Veterinary School (at St. Hyacinthe), affiliated with the University of Montreal, offers a course leading to a doctorate in veterinary medicine. Two agricultural technological institutes (at Ste. Anne de la Pocatière and St. Hyacinthe), opened in 1962, give training in modern farming techniques and in the handling and processing of farm products.

There are also 15 secondary agricultural schools located throughout the province, and five orphanages offer courses in agriculture. About 1,000 students, the great majority of whom are sons of farmers, attend these intermediate or regional schools of agriculture and 230 pupils follow practical agricultural courses in the orphanages. A farm is annexed to each school for practical training and specialists give instruction on the maple sugar industry, farm mechanics, co-operatives, plant protection, veterinary hygiene, aviculture, marketing, silviculture, etc. School co-operatives and clubs are organized and directed by the pupils under supervision. Household training for the daughters of farmers and settlers is given in nine of these schools.

Ontario.—A two-year course at the Ontario Agricultural College (for the Associate Diploma in Agriculture) provides basic training for young persons interested in making agriculture their vocation. Study includes the application of science to agricultural practice and training for rural citizenship. A four-year course at the same institution for the degree of Bachelor of Science in Agriculture gives fundamental education in the science of agriculture. Sound training is provided for farming as a profession, for entrance into all agricultural services, industry and teaching, and for those who wish to proceed to graduate studies for master and doctorate degrees. Graduate courses are offered leading to the degree of Master of Science in Agriculture. Graduate students are enrolled in a department or departments of the Ontario Agricultural College conjointly with a department or departments of the University of Toronto for advanced courses of study and training in experimentation and scientific investigation. M.S.A. graduates may go into teaching, research or postgraduate study.

Macdonald Institute offers two main courses in home economics for young women. The one-year course of practical training in the art and science of homemaking earns a diploma of merit but gives no professional standing. The four-year professional course leads to a Bachelor of Household Science degree granted by the University of Toronto. University matriculation standing (nine papers of grade 13) is necessary to enter the four-year course. At its completion, Food Administration Option graduates are eligible to work in the professional dietetic and food-service fields. These graduates and those of the Clothing and Textiles Option and the Home Management Option are finding increasing employment in many areas, notably in the education, extension, business and research fields.

The Ontario Veterinary College offers a five-year course leading to the degree of Doctor of Veterinary Medicine. In addition to its function as a teaching institution, the College is a research centre for animal diseases and provides free consultation services for veterinary surgeons in practice as well as extension services in the interests of the livestock industry.

The Kemptville Agricultural School offers: a diploma course in agriculture comprised of two six-month terms, giving practical training in modern farming methods and community leadership, and designed primarily for young people who wish to farm but serving also as a preparation for many other occupations closely connected with agriculture; a six-month advanced course in agricultural mechanics for diploma graduates in agriculture; a six-month homemaker course leading to a diploma in homemaking and qualification for positions in home economics fields; a diploma course comprised of two six-month terms for girls wishing to prepare for positions in food services, sewing centres, tourist services and other fields of home economics. In addition, a three-month course is given for dairy apprentices, leading to the Dairy School Diploma required for certified buttermakers, cheesemakers and operators of dairy manufacturing plants. A 450-acre farm and residence life are features of the Kemptville Agricultural School.

The Western Ontario Agricultural School at Ridgetown offers a two-year diploma course (October to April), which gives practical training in modern farming methods and prepares young men to serve agriculture in allied occupations. The facilities comprise a group of modern buildings, including a residence and dining hall, modern classrooms, laboratories, and athletic facilities. There is a 425-acre farm with up-to-date equipment, much of which is used for student activity and for practical demonstrations. A full complement of livestock is maintained on this farm for carrying out the school program.

Manitoba.—The Faculty of Agriculture and Home Economics of the University of Manitoba offers degree courses in agriculture and home economics as well as a two-year, sub-collegiate diploma course in agriculture. Practical short courses in agriculture and homemaking are also given at the Agricultural Extension Centre at Brandon.

Saskatchewan.—The University of Saskatchewan offers a degree course in agriculture designed to meet the needs of those who intend to teach agriculture in secondary

schools or colleges, to engage in research extension or administrative work, or to farm. Specialization is possible with permission of the faculty. Provision is made for combined courses in agriculture and arts or commerce. Postgraduate courses are available.

The Saskatchewan School of Agriculture offers a practical course intended to give sound training in farm practice and also to train young men in rural leadership.

All courses leading to a degree in home economics require four years. The prescribed course of studies for the first two years is the same for all pupils but in the third and fourth years four types are offered: (1) for teachers, (2) for dietitians, (3) general, and (4) additional specializations. A combined course leading to a degree in arts and science and home economics requires at least five years.

Alberta.—The University of Alberta offers a four-year degree course in agriculture to students with senior matriculation or its equivalent. Students may elect a general program or major in a wide range of special courses in the fields of animal science, economics, entomology, dairying, plant science, and soils. Graduate work at the master level is offered in all departments and at the doctorate level in some.

The Alberta Schools of Agriculture and Home Economics located at Olds, Vermilion and Fairview will, commencing in the autumn of 1963, plan new programs designed primarily for rural young people. To give greater flexibility and allow for specialization, courses will be offered in terminal three-month sessions. Three sessions will be held at Olds and two at both Vermilion and Fairview. Students with grade 9 standing will require successful completion of four sessions. Those with 70 or more high school credits can secure a diploma after three sessions. Boys can take general-specialized work in agriculture and girls can choose commercial, general home economics (Vermilion only), and clothing or foods specialties at Olds and Fairview.

British Columbia.—The Faculty of Agriculture at the University of British Columbia offers a four-year general degree course in agriculture and a five-year honours course. In the honours course there are 15 fields in which a student may specialize. Work is also offered by the Faculty of Agriculture in the Faculty of Graduate Studies through which a student may proceed to the degrees of Master of Science in Agriculture and Master of Science; in a limited number of fields, work is offered at the doctorate level. The Faculty also offers a one-year or two-year diploma course in occupational agriculture, adaptable to the needs of individual students.

In co-operation with various branches of the provincial Department of Agriculture and under the auspices of the University Extension Department, the Faculty of Agriculture also offers a number of short courses which vary in length from one or two days to several weeks.

Section 3.—Land and Water Conservation*

Subsection 1.—Federal Projects

Federal participation in programs designed to aid in the conservation of Canada's land and water resources began before the turn of the present century. Starting in 1877, this included the work of the now disbanded Department of the Interior in the field of engineering survey and development of water resources in Western Canada; later, such programs included those conducted by the Prairie Farm Rehabilitation Administration in the fields of soil and water conservation on the prairies, the work of the Marshlands Reclamation Service on the eastern seaboard, water development projects undertaken by the Department of Northern Affairs and National Resources under the terms of the Canada Water Conservation Assistance Act and, most recently, the broad and comprehensive resource development program for all of Canada envisaged under the new Agricultural

* Except as otherwise credited, this Section was prepared under the direction of S. C. Barry, Deputy Minister, Department of Agriculture, Ottawa.

Rehabilitation and Development Act (see p. 423). Over this period, many policies and projects were undertaken, varying widely in nature and scope but all having as their basic objective the better utilization of Canada's land and water resources as a means of providing greater security and stability for Canadian agriculture.

For the most part centred in Western Canada, this work has involved the introduction of systems of farming, land use and water supply that would provide greater economic security for the agricultural population on the prairies and, more recently, the development of larger and more comprehensive land utilization and water development schemes to serve entire agricultural districts and prairie communities. Cultural improvements have led to an almost completely new approach to the economics and practice of dry-land farming. Techniques in soil management and methods of making more efficient use of limited supplies of soil moisture have been developed and are in common use, helping materially to minimize the drought problems in certain areas. The provision of adequate farm water supplies for domestic, stockwatering and crop-growing purposes has also been of great advantage throughout the drought region; in particular, the provision, through irrigation, of assured feed supplies to carry livestock through the winter and through periodic dry periods has given much greater stability to the livestock industry and has encouraged agricultural diversification in the plains region.

Other major projects bringing about adjustments in the pattern of land use on the prairies have been the permanent removal from cultivation of lands that have proven submarginal for cereal crop production, the fencing, regrassing and other improvement of such areas for community pasture purposes, and the resettlement and rehabilitation of farmers operating such lands, principally to irrigation projects.

While such adjustments have been of considerable benefit to the agricultural economy in the prairie region, new and growing demands on Canada's land and water resources, from agricultural and urban centres alike, have made necessary an entirely new and comprehensive approach to the resource development problem. This has included the construction of larger and more extensive multi-purpose water conservation schemes to support greater urban and industrial growth and to supply water for large-scale irrigation, etc.; the implementation of appropriate alternative land-use projects to make more efficient utilization of Canada's land resources; and the introduction of new and more imaginative programs in local rural development, designed to raise the general standard of living of people within such areas. In the light of these objectives, an increasing amount of attention has been directed recently by federal agencies to this type of development.

Prairie Farm Rehabilitation Act

The Prairie Farm Rehabilitation Act was passed by the Parliament of Canada in April 1935 to provide for the rehabilitation of drought and soil drifting areas in the Provinces of Manitoba, Saskatchewan and Alberta. An initial appropriation of \$4,750,000 was made to cover the cost of rehabilitation activities for a period of five years, and an Advisory Committee was established by the Act to give leadership to the program. The Experimental Farms of the federal Department of Agriculture played an important role. As the PFRA developed, however, a separate administration was set up in Regina in 1936 to direct water development, while the cultural improvement program continued under the direction of the Experimental Farms. Then, by amendment to the Act in 1937, PFRA was extended to include land utilization and resettlement. It was realized, however, that for the development of a sound agricultural economy on the prairies, more long-term measures for rehabilitation would be necessary. In 1939, therefore, additional financial allocations were made and the five-year limitation to the PFRA was removed.

The PFRA has completed its 28th year of operation and throughout these years a broad and varied program of rehabilitation has been conducted. A résumé of the current activities being carried out by PFRA follows.

Water Development.—Projects constructed under the water-development program under the supervision of the Water Development Services Branch are divided into two categories according to size of project, number of people benefiting, and cost of construction: (1) individual and neighbour projects and (2) community projects.

Individual and neighbour projects are works serving the needs of one or two farmers and are generally in the form of small dams and dugouts that supply water for stockwatering and domestic use and/or for irrigation purposes. PFRA provides all engineering services required to plan and design such projects and a portion of the construction costs. The rate of assistance paid on individual projects is based on yardage of earth moved and amounts to seven cents per cubic yard up to a maximum of \$250 for dugouts, \$300 for stockwatering dams and \$600 for irrigation projects. Where two or more farmers pool their water resources to build neighbour projects, assistance is paid up to a maximum of \$1,000. Responsibility for the actual construction is left to the farmer who either contracts the work out or builds the project himself. Community projects utilize the waters of well-defined watersheds and are built to serve the needs of groups of farmers. Each project is justified on the basis of its individual merit and the major share of cost is borne by PFRA.

During the 28 years in which PFRA has been engaged in this work, the program has resulted in the construction of more than 85,000 individual and neighbour projects and approximately 900 community water-storage and development schemes.

Major Projects.—While the immediate needs of farmers are being met by PFRA under the water-development program, attention has been given recently to the construction of larger irrigation and reclamation projects involving the development of many thousands of acres of land. Such undertakings are in line with the long-range land-use plan to provide for expansion and stability in Canada's growing economy. Of an estimated 3,000,000 acres of potentially irrigable land in Western Canada, 1,500,000 acres have been developed or are in process of being developed. The construction of these large irrigation and reclamation works, which, because of their size or their location, are undertaken by agreement between the Federal Government and the provincial government concerned, is financed through special vote of Parliament.

St. Mary Project.—To make available for irrigation a larger percentage of the water flowing through southern Alberta in the Waterton, Belly, St. Mary and Milk Rivers, a program to extend the original St. Mary Irrigation Project was undertaken jointly by the Government of Canada and the Province of Alberta. The Federal Government agreed to construct the main supply reservoirs and the connecting canals and the Province of Alberta agreed to construct the irrigation distribution system. Construction of the St. Mary dam, key structure on the whole project, was finished in 1951. In 1958, the second phase, involving the diversion of the Belly River into the St. Mary Reservoir, was completed. The third step, involving the diversion of the Waterton River into the St. Mary Reservoir by way of the Belly River diversion, is under construction. The present storage and distribution facilities extend irrigation to 296,000 acres of land in the St. Mary Project. With the addition of resources of the Waterton River, a further 214,000 acres will be brought under irrigation, making a total of 510,000 acres.

Bow River Project.—The Bow River Irrigation Project, situated west of Medicine Hat in Alberta and having an irrigation potential of 240,000 acres, was taken over by the Federal Government from the Canada Land and Irrigation Company in 1951; the Company had developed about 57,000 acres before financial difficulties caused suspension of work. PFRA commenced the orderly rehabilitation of the project works and is proceeding with the development of the remainder of the area. The Federal Government is responsible for settlement of the areas surrounding Vauxhall and Hays where farms have been provided for 436 settlers; 152 have now been established in the Hays district.

South Saskatchewan River Development Project.—In July 1958 agreement was reached between the Federal Government and the Province of Saskatchewan to start construction

on the South Saskatchewan River Development Project, a large-scale multi-purpose water conservation development in south-central Saskatchewan being undertaken for the purpose of making better use of the water resources of the river through irrigation, river control, power development, urban water supply and recreation facilities. Control will be achieved by two dams, the major one on the South Saskatchewan River at a point approximately half-way between the towns of Outlook and Elbow and the other at the divide between the valleys of the South Saskatchewan and the Qu'Appelle Rivers. The two governments will share the cost of building the dams and all other works associated with the creation of the reservoir; 75 p.c. will be borne by the Federal Government and 25 p.c. by Saskatchewan, the provincial share being not more than \$25,000,000.

The completed project will provide water for the irrigation of about 500,000 acres of land in central Saskatchewan on both sides of the South Saskatchewan River between the town of Elbow and the city of Saskatoon, and in the Qu'Appelle Valley extending east of Elbow to the Manitoba border. Power installations at the damsite will have a potential output of 475,000 kwh. The reservoir—140 miles long with a capacity of 8,000,000 acre-feet of water—will be constructed at an estimated cost of \$96,000,000. The main dam—210 feet high and of earth fill with an over-all length of 16,700 feet—will be the largest rolled-earth dam to be built in Canada and one of the largest of its kind in the world.

Construction started in the autumn of 1958 and by July 31, 1963, 34 contracts, with a total value of \$68,000,000, had been awarded. Of these, 28 were completed and total expenditures, including progress payments on contracts currently active, amounted to approximately \$54,000,000. The latest activities have been associated mainly with the construction of the five river diversion tunnels and appurtenant works. In addition to paying 75 p.c. of the cost of construction of the dam, the Federal Government is supplying all engineering, administration and supervisory requirements.

Saskatchewan River Reclamation Project.—The possibility of successfully reclaiming for agricultural purposes 1,500,000 acres of Saskatchewan River Delta land between Tobin Rapids in Saskatchewan and Cedar Lake in Manitoba has long been under consideration. As a result of an agreement made in early 1953 between the Government of Canada and the Manitoba Government, work was begun on the construction of flood control and drainage works to reclaim about 100,000 acres in one region of the project referred to as the Pasquia Area, near The Pas. The Federal Government assumed the cost of building the main protective and drainage works and the provincial government assumed the cost of settlement, maintenance of works and internal drainage. One quarter of the reclaimed land will be used for the resettlement of farmers from drought areas and the remainder sold, with 75 p.c. of the proceeds going to the Federal Government as partial reimbursement of expenditure on the project. Construction was completed in 1960 and the project has been officially transferred to the Province of Manitoba for internal development and settlement.

Northwest Escarpment and Interlake Reclamation Project.—Under the terms of an agreement between the Governments of Canada and Manitoba, mutually acceptable projects for flood control and land reclamation within the Northwest Escarpment and Interlake regions of Manitoba may be undertaken on a cost-sharing basis, with PFRA providing engineering services as required. Initially, projects under this agreement included extensive investigations and reclamation work in the Riding, Duck and Porcupine Mountain areas and Whitemud River watershed, where flooding and erosion seriously affected 252,000 acres of valuable agricultural land. The reclamation work consisted of clearing and dyking stream channels, preventing stream-bank erosion and aligning channels by building cutoffs and diversions. Since 1958, work in this area has been confined mainly to watershed investigations on the headwaters of Wilson Creek. In the Interlake region, reclamation has been concerned with projects on the Fairford and Icelandic Rivers, which have been completed.

Assiniboine River Project.—Along the Assiniboine River between Portage la Prairie and Headingly in Manitoba, the problem of flooding has faced farmers and communities over the years, often resulting in considerable damage to land, buildings and other property. Responsibility for flood protection work carried out in the area by the federal Department of Public Works was, in 1950, transferred to the Canada Department of Agriculture under PFRA and activities have, since then, involved mainly construction of dykes and channel improvement. However, as a result of recent surveys, an agreement was signed between the Federal and Manitoba Governments during 1962 for the construction of a major flood control and water conservation dam on the Assiniboine River near its confluence with the Shell River. This dam will be 75 feet high and will create a reservoir 40 miles long with a storage capacity of 430,000 acre-feet of water.

Buffalo Pound Water Supply Project.—Buffalo Pound Lake in Saskatchewan was developed to supply water for agricultural purposes downstream in the Qu'Appelle Valley and also to supply urban water for the cities of Regina and Moose Jaw. Local water supplies in the Lake, however, are not always adequate to meet these needs and must be supplemented with water drawn from the South Saskatchewan River. For this purpose, the Government of Canada constructed a pumping system on the river near Elbow to raise water over a height of land into the Qu'Appelle Valley where it may be carried through a series of canals and improved river channel to Buffalo Pound Lake, a distance of 55 miles. Construction of these works was completed in 1960 and more than 50,000 acre-feet of water have been delivered to the reservoir since pumping operations commenced.

British Columbia Projects.—The PFRA has been carrying out irrigation development and land reclamation and providing engineering services in British Columbia since 1944; this work has been undertaken for and in connection with the Veterans' Land Act, the Experimental Farms Service, and at the request of the Province of British Columbia.

Nine irrigation projects have been developed or rehabilitated in the arid central interior of the province. The irrigable land on these projects totals approximately 5,300 acres and provides direct or supplemental living for some 1,400 families engaged mainly in the growing of small fruits and vegetables and in dairying. Seven of the projects were constructed for the Veterans' Land Act following the Second World War and benefit approximately 500 veterans. The Johnson Western Canada Ranching Projects, Nos. 1 and 2 (Todd Hill Irrigation District), and the Chase Irrigation Project are located in the South Thompson Valley. The Cawston Benches Project, Westbank Project, Penticton West Bench Project and Bankhead Project are all located in the southern Okanagan Valley and form some of the largest individual developments for veteran settlement in Canada.

The other two developments are located in the Thompson Valley near Kamloops and were constructed in co-operation with the Province of British Columbia. The B.C. Fruit lands Irrigation District includes some 2,000 acres of irrigable land and also about 700 small holdings. This district had been served by a gravity water system from Jamieson Creek for over 40 years but the system deteriorated to such an extent that the district could no longer guarantee water to its users. Rehabilitation of the project was undertaken by agreement with the province and the irrigation district concerned, and completed by PFRA in 1958. A pressure irrigation system was also installed by PFRA for the irrigation of 290 acres of the Provincial Sanatorium farm lands at Tranquille.

A major reclamation project was undertaken in the Lillooet Valley upon agreement between the Federal Government, the Government of British Columbia, and the Pemberton Valley Dyking District. This involved the reclamation of the lower 20 miles of the Lillooet River Valley through dyking, drainage and channel improvement to reclaim some 12,000 acres of agricultural land and to protect an additional 2,000 acres already under cultivation.

Engineering services have been provided by PFRA to the Experimental Farms and to other government agencies as requested. Some of these services have included surveys in the Fraser River Basin for the federal-provincial Fraser River Board, reports on proposed

project development and reclamation in British Columbia, and services to the Experimental Farms for the establishment and improvement of farm water supplies and irrigation systems.

Land Utilization and Resettlement.—The 1937 amendment to the Prairie Farm Rehabilitation Act broadened its scope to include land utilization and land settlement, opening the way for a program that has had a far-reaching effect on the stability of agricultural production in many areas throughout Western Canada. By agreement with the Provinces of Saskatchewan and Manitoba, lands not considered suitable for cereal crop production may be transferred to the Federal Government for development by PFRA into community pastures. The province concerned selects the area to be developed and obtains control of the land. The land is then leased to the Government of Canada which in turn agrees to construct, maintain and improve community pasture facilities in the area selected. In this way, land subject to the hazards of soil drifting is removed permanently from cultivation and is again protected by grass cover.

As these submarginal and marginal lands are converted into productive pastures, livestock production on the surrounding farms is being increased, thus making possible a greater diversity of farm income. Since the community pasture program began in 1937, approximately 2,092,751 acres of land have been developed into 72 separate pasture units. These pastures, intended primarily for reserve grazing areas to supplement farm and ranch pastures, are providing controlled spring, summer and fall grazing for over 140,000 head of stock annually, belonging to approximately 7,000 farmers and ranchers. In addition, a considerable tonnage of hay and some grass seed have been harvested from these pastures. This program of pasture improvement carried on by PFRA has provided leadership to farmers in the development of their own farm pastures.

The resettlement of farmers from these submarginal areas has been handled jointly by the Federal Government and provincial governments concerned. Where available, the provincial governments provide suitable Crown land on which to resettle farmers. PFRA in turn accepts responsibility for moving the farmers and their effects to the new locations, and for developing the submarginal areas for pasture purposes. Every effort has been made to resettle farmers on lands located close to existing or proposed pastures. Where no suitable Crown lands are available, PFRA provides its own through irrigation development. Two such schemes have been built specifically for resettlement purposes in Alberta: a large block of land adjacent to the Eastern Irrigation District called the Rolling Hills Project, to which 118 farm families have been moved from drought areas; and the Bow River Irrigation Project where 152 farm families are settled in an area of approximately 27,000 acres called the Hays District.

On somewhat the same principle, six resettlement and rehabilitation projects have been built in the heart of the drought area in southwestern Saskatchewan. The only difference is that for these projects the purposes and objectives of the resettlement and rehabilitation program have been achieved without necessarily involving the movement of farmers to new locations. The six schemes—the Val Marie, West Val Marie, Eastend, Consul, Maple Creek and Swift Current Irrigation Projects—are subdivided into 40-to-80-acre plots which are leased out or sold to farmers in surrounding districts for feed production. On the irrigated land, farmers can be assured of producing adequate and dependable winter feed supplies as well as reserves of feed to carry stock over prolonged drought periods.

In a similar manner, hundreds of farmers have been rehabilitated without the necessity of moving from their farms by the development of farm-size and small community irrigation schemes built throughout the prairies with PFRA assistance.

Maritime Marshland Rehabilitation Act

The MMRA program was instituted by federal legislation in 1948 to provide assistance to the Provinces of Nova Scotia, New Brunswick and Prince Edward Island in preserving and developing tidal marshland areas, most of which are situated adjacent to

tributaries of the Bay of Fundy. The areas are subject to flooding by tide water unless protected by systems of dams or dykes and aboiteaux (freshwater-control structures). The soils are potentially productive and when properly used yield excellent crops.

Responsibility for the rehabilitation of approved marshland areas is shared by the provincial and federal governments. The latter undertakes the construction of works required to prevent flooding of lands by saltwater, maintains the structures until this responsibility is turned over to the provinces, and provides engineering services required in connection with the program. The provincial governments organize the owners of land and ensure that the marshland areas are adequately drained and that suitable land-use policies are developed and encouraged.

By Mar. 31, 1962, the provinces had requested the protection of some 96,000 acres from saltwater flooding. Structures had been completed to protect 81,265 acres (Nova Scotia 44,054 acres, New Brunswick 36,936 acres, and Prince Edward Island 275 acres). This acreage forms parts of approximately 3,500 farms having a total area of over 450,000 acres. Protection of most of the unprotected acreage is being postponed, or is undecided, either because of the high cost of the required works, or until a more economic use of the land is found.

Conventional structures for the protection of marshlands are normally considered to be dykes and aboiteaux, supplemented by stream-bank control works. It has been found feasible to construct aboiteaux or dams across some tidal streams which eliminate the need for dykes and aboiteaux upstream of the proposed site and permit more efficient drainage of the land protected. Two of the more important structures of this type are the Annapolis River Dam in Nova Scotia and the Tantramar River Dam in New Brunswick, both in full operation. Each was undertaken on a share basis with a provincial authority, as they serve as river crossings for traffic and eliminate the need to rebuild highway bridges at these locations in the future. The structures consist of rock-fill dams and freshwater discharge control gates; they were constructed on tidal rivers having tide ranges in excess of 30 feet and 40 feet, respectively. The addition of power-generating facilities to harness some of the energy produced by the tide at Annapolis Royal, N.S., was studied and found possible, but the cost was too high to warrant further consideration.

Canada Water Conservation Assistance Act*

To help municipal and provincial governments with financing major water conservation and control projects, the Canada Water Conservation Assistance Act was passed by Parliament in 1953. Under the Act, the Federal Government may enter into an agreement with any province matching the provincial contribution up to a maximum of 37.5 p.c. of the cost of a major water conservation project that is considered to be beyond the normal financial means of the provincial and municipal governments involved.

The Federal Government has signed three agreements with the Government of Ontario providing federal financial participation in three major water conservation projects. In each project, the estimated cost is to be distributed among the federal and provincial governments and a conservation authority, the two governments each contributing 37.5 p.c. of the cost and the conservation authority the remaining 25 p.c.

The first agreement under the Act was signed Jan. 28, 1961, providing federal assistance to a \$9,640,500 flood control and water conservation project in the Upper Thames

* Prepared in the Water Resources Branch, Department of Northern Affairs and National Resources, Ottawa.

River basin. The Upper Thames River Conservation Authority, a grouping of 31 municipalities, will pay 25 p.c. of the cost of construction of five dams and three channel improvement works included in the project and will administer the completed project. Construction of the works is to be completed within ten years of the date of signing.

Other agreements signed between Canada and Ontario provided for federal cost-sharing in the construction of the \$825,000 Parkhill Dam Project in the Ausable River watershed in western Ontario and the \$24,000,000 flood control and water conservation works that will be built along the Humber and Don Rivers in the Metropolitan Toronto area. The conservation authorities involved in these projects are, respectively, the Ausable River Conservation Authority and the Metropolitan Toronto and Region Conservation Authority. Prior to the passing of this legislation, the Federal Government provided 37.5 p.c. of the cost of building the Shand and Luther Marsh Dams on the Grand River, the Conestogo Dam on the Conestogo River, and the Fanshawe Dam on the Thames River.

To be eligible for federal assistance under the Canada Water Conservation Assistance Act, a project must meet three conditions. The works must be designed primarily for flood control or other beneficial uses. It must be major in character in relation to the financial capability of the province entering into the agreement. It also must be beneficial to a community as a whole. The Act requires that complementary conservation measures be carried out in addition to the primary flood control and water conservation works.

Subsection 2.—Provincial Projects

Saskatchewan.*—The Conservation and Development Branch of the Saskatchewan Department of Agriculture was established in 1949 to administer water rights in the province and to carry on an active program in irrigation, drainage, flood control and land reclamation and development. Program emphasis has varied from year to year; drainage and flood control were of greatest importance during most of the 1950's but, because of the drier weather during the past four years, irrigation and community pasture development have taken precedence. The following is a summary of Branch activities to Mar. 31, 1962.

Water Rights.—Surface and ground water resources of the province are administered by the Water Rights Division of the Branch. At Mar. 31, 1962, 6,678 projects were licensed and 1,615 authorized under the Water Rights Act, involving total storage of 61,017 acre-feet; three hydro-electric developments were licensed and two other licences had been applied for under the Water Power Act; 180 water-well drillers were licensed and 2,529 wells were reported drilled under the Ground Water Conservation Act.

Irrigation Development.—Up to the end of March 1962, 54 irrigation projects had been initiated on which topographic surveys had been conducted on 467,114 acres (approximately one half on the South Saskatchewan River). In addition, 368 miles of ditch had been constructed and 1,950 water-control structures built. Forty-six Water Users' Districts had been organized comprising some 209,443 acres.

Drainage and Flood Control.—By the end of March 1962, some work had been done on 461 drainage and flood-control projects. Topographic surveys had been carried out on 200,027 acres, some 707 miles of ditch dug, and 1,038 control structures built. A total of 7,500,000 acres have been organized into 69 conservation areas.

* Revised by the Deputy Minister, Saskatchewan Department of Agriculture.

Land Development and Pasture Construction.—A total of 159 land-development and community pasture projects had been worked on up to the end of March 1962. Some 85,626 acres of forage had been seeded and 1,263 miles of fence constructed. Approximately 715,460 trees had been planted under the afforestation program.

Community Pastures.—Through the Lands Branch of the provincial Department of Agriculture, the province had transferred title to 1,196,963 acres and had leased without charge another 374,319 acres of land to PFRA for community pastures. Outside the PFRA program, the province at Mar. 31, 1962 had another 921,884 acres in 138 community pastures operated by co-operative associations, by municipalities or by the provincial Department of Agriculture; during 1962, 26 pastures operated by the province provided grazing for 28,461 head of cattle owned by 1,876 local farmers.

Development of Land for Cultivation.—Crown lands, either under cultivation or suitable for cultivation, are leased for 33-year periods. The province may reimburse farmers in cash for the cost of clearing and breaking virgin land or the farmers may retain crop shares equivalent in value to costs sustained. To Mar. 31, 1962, the investment of the province for land clearing and breaking amounted to \$9,490,230, and included work done in six settlement projects involving initial clearing and breaking on about 200 farm units before the land was leased.

Alberta.*—The Alberta Water Resources Act gives the Minister of the Department of Agriculture wide powers to investigate the water resources of the province and extensive surveys have been carried out to determine the distribution and extent of the available water supply in the province and the most beneficial use for irrigation, water power and other purposes. The Water Resources Branch of the provincial Department of Agriculture administers the licensing of water power projects and the construction work in several irrigation projects. Irrigation projects are also licensed and water allocated for domestic and irrigation purposes. Other work includes administration of drainage districts and co-operation on the Peace River dug-out project and on river protection projects where flooding occurs. In more recent years much of this work has been carried out by the Federal Government in co-operation with the Government of Alberta.

Stream measurement is being done by the Hydrometric Service of the federal Department of Northern Affairs and National Resources, and irrigation surveys are carried out largely by the water development organization under PFRA (see pp. 433-434).

The figures given in Table 4 of land actually irrigated in Alberta in 1961 are only approximate because, while there are increases resulting from the creation of new pump irrigated areas, there are also decreases caused by soil reclassification and less water use, depending on natural precipitation. Seepage and alkali problems also have an effect on acreage quoted as irrigable. Figures for small private irrigation projects have been omitted because of their uncertain water supply.

Gross cash returns from the irrigable area are estimated at \$30,000,000, although this figure does not take into account the value of stockwater supplied through irrigation works. Nor does it include many other credit items that are difficult to evaluate such as the recreational use of water which, to these once semi-arid areas, is particularly important and the value of fish taken from irrigation reservoirs which is known to be quite significant. Several communities receive their entire domestic water supply via irrigation canals.

* Revised in the Deputy Minister's office, Alberta Department of Agriculture.

4.—Major Irrigation Districts in Alberta, 1961

District	Classified Irrigable Area	Area Actually Irrigated in 1961
	acres	acres
St. Mary and Milk Rivers Development.....	259,861	157,300
Magrath Irrigation District.....	7,885	5,000
Raymond Irrigation District.....	19,058	13,000
Taber Irrigation District.....	32,100	30,747
Western Irrigation District.....	50,000	13,000
Eastern Irrigation District.....	250,000	189,421
Bow River Development—		
Federal.....	94,783	71,140
Provincial.....	35,217	9,463
Mountain View Irrigation District.....	3,600	2,759
Leavitt Irrigation District.....	4,631	1,542
Aetna Irrigation District.....	8,303	1,800
United Irrigation District.....	34,005	23,005
Lethbridge Northern Irrigation District.....	96,135	73,637
Ross Creek Irrigation District.....	2,069	200
Macleod Irrigation District.....	3,000	—
Totals.....	900,647	592,104

British Columbia.—About 20 p.c. of the arable land in British Columbia is under cultivation, and nearly all of the grazing area is being utilized. The 1,300,000 acres of improved land give a ratio of approximately one acre per person. Within this arable area there exists an estimated 220,000 acres of irrigated land, and the total additional acreage of irrigable land in British Columbia is estimated at 400,000 acres. About three quarters of the irrigated area is made up of individual projects and the remainder is served by the larger irrigation projects listed in Table 5.

5.—Major Irrigation Projects in British Columbia, 1963

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land	Locality
		acres	acres	\$ per acre	
Provincial Irrigation System—					
Southern Okanagan Lands Project.....	Okanagan River.....	7,770	4,770	12.50	Okanagan Valley
Municipal Irrigation Systems—					
Penticton Municipality....	Penticton and Ellis Creeks..	2,067	1,967	24.00/20.00	Okanagan Valley
Sumnerland Municipality....	Trout and Eneas Creeks....	3,439	3,396	14.85	Okanagan Valley
Irrigation Districts—					
Bankhead.....	Kelowna and Mission Creeks	90	89	24.50	Okanagan Valley
Barriere.....	Barriere River.....	181	129	4.50	North Thompson Valley
B.C. Fruitlands.....	Jameson and North Thompson Rivers.....	2,200	1,660	16.20	"
Black Mountain.....	Mission Creek.....	4,264	3,693	15.00	Okanagan Valley
Black Sage.....	Okanagan River.....	184	174	17.00	"
Blueberry Creek.....	Blueberry Creek.....	132	66	15.00	Columbia Valley
Boundary Line.....	Osoyoos Lake.....	94	94	15.93	Okanagan Valley
Brent Davis.....	Mission Creek.....	469	416	8.00	"
Cawston.....	Similkameen River.....	400	375	14.00	Similkameen Valley
Chase.....	Chase Creek.....	639	639	2.50	South Thompson Valley
Covert.....	4th of July and Gibbs Creeks.....	280	280	8.00	Kettle Valley
East Creston.....	Arrow Creek.....	1,415	1,220	5.00	Kootenay Valley
East Osoyoos.....	Haynes Creek and Osoyoos Lake.....	174	170	36.00	Okanagan Valley
Ellison.....	Kelowna Creek.....	760	662	6.95	"
Erickson.....	Sullivan Creek.....	95	95	5.00	Kootenay Valley

5.—Major Irrigation Projects in British Columbia, 1963—concluded

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land	Locality
		acres	acres	\$ per acre	
Irrigation Districts—concl.					
Fairview Heights.....	Similkameen River.....	627	627	28.00	Similkameen Valley
Glenmore.....	Kelowna Creek and Okanagan Lake.....	1,987	1,987	13.00	Okanagan Valley
Grand Forks.....	Kettle River.....	2,500	2,328	6.00	Kettle Valley
Heffley.....	North Thompson River.....	1,653	1,653	2.64	North Thompson Valley
Kaleden.....	Marron River, Shatford and Shingle Creeks.....	542	542	18.00	Okanagan Valley
Keremeos.....	Ashnola and Similkameen Rivers.....	1,033	1,033	18.00	Similkameen Valley
Lakeview.....	Lambly Creek.....	1,070	1,070	12.00	Okanagan Valley
Malcolm Horie.....	Joseph Creek.....	150	150	7.50	Kootenay Valley
Naramata.....	Naramata, Lequime and Robinson Creeks.....	1,087	973	24.75	Okanagan Valley
North Canyon.....	Camp Run Creek.....	433	394	1.50	Kootenay Valley
Okanagan Falls.....	Okanagan River.....	233	230	11.00/30.00	Okanagan Valley
Okanagan Mission.....	Bellevue Creek, Okanagan Lake.....	534	534	21.00	"
Osoyoos.....	Haynes, Long Joe, Nine Mile Creeks and Osoyoos Lake.....	243	243	25.00	"
Oyama.....	Wood and Kalamalka Lakes.....	362	362	22.00	"
Peachland.....	Peachland Creek.....	550	444	13.00	"
Renata.....	Dog Creek.....	122	122	7.00	Columbia Valley
Robson.....	Norns Creek.....	262	250	6.00	"
Scotty Creek.....	Scotty Creek.....	844	823	4.50	Okanagan Valley
Shuttleworth Creek.....	Shuttleworth Creek.....	282	109	8.00	"
Southeast Kelowna.....	Hydraulic and Klo Creeks.....	3,459	3,459	16.00	"
South Vernon.....	Vernon Creek.....	354	273	5.00	"
Todd Hill.....	South Thompson River.....	145	118	15.00	South Thompson Valley
Trout Creek.....	Trout Creek.....	318	278	10.00	Okanagan Valley
Vermilion.....	Kindersley Creek.....	300	300	6.25	Columbia Valley
Vernon.....	Coldstream Creek.....	7,969	6,668	5.00	Okanagan Valley
Vinsulla.....	Knouff Creek.....	298	175	—	North Thompson Valley
Westbank.....	Powers Creek.....	1,000	818	15.30	Okanagan Valley
West Bench.....	Okanagan River.....	265	210	45.00	"
Westside.....	Goldie Creek.....	120	90	12.00	Columbia Valley
Wilmer.....	Wilmer and Bruce Creeks.....	241	109	6.00	"
Winfield and Okanagan Centre.....	Vernon Creek.....	1,889	1,827	6.00	Okanagan Valley
Wyndel.....	Duck Creek.....	507	507	4.00	Kootenay Valley
Irrigation Companies—					
Wood Lake Water Com- pany.....	Oyama Creek.....	832	832	7.50	Okanagan Valley

Section 4.—Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information is obtained through the Censuses of Canada and through partial-coverage surveys. Results of the 1961 Census are summarized in Section 5 of this Chapter and are available in greater detail in Census publications issued by the Bureau.† A list of such publications is available on request.

The Bureau also collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure

* Revised in the Agriculture Division, Dominion Bureau of Statistics.

† Available from the Dominion Bureau of Statistics or the Queen's Printer, Ottawa.

per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the federal Department of Agriculture and various provincial departments, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, co-operate with the Bureau. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland. Agriculture plays a relatively minor part in Newfoundland's economy, commercial production of most agricultural products being quite small. In the following Subsections details are given for 1962; figures are subject to revision.

Economic Activity in 1962 Related to Agriculture.—The continued upward trend in Canadian economic activity during 1962 is reflected in the gross national product which rose to \$40,401,000,000, 8 p.c. higher than in 1961. This expansion represented the largest year-to-year gain since 1956 when the economy was stimulated by an exceptionally high level of capital expenditure. Price increases were moderate in 1962; they accounted for less than 2 p.c. of the increase in gross national product, leaving a gain in volume of a little more than 6 p.c.

All the main components of gross national expenditure contributed to the increase in the aggregate. Consumer spending, which rose more than 5 p.c., was a major expansionary influence. Investment in fixed capital resumed its upward course with the bulk of the increased outlays being for machinery and equipment. With a near record crop in 1962, in contrast to a poor crop in 1961, there was a considerable accumulation of farm grain inventories in place of the liquidation of a year earlier. An increase in exports of nearly 8 p.c. reflected, in part, the lower exchange value of the Canadian dollar; imports also rose but not to the same extent. Government expenditure was up substantially, largely as a result of outlays at the provincial municipal level.

The salient developments on the income side were a 7-p.c. rise in labour income, an 11-p.c. increase in corporate profits and a sharp expansion in farm income largely as a result of the near record crop. Personal income rose at about the same rate as national income.

It is estimated that, for the year 1962, realized net income of farmers from farming operations, which includes inventory changes, amounted to \$1,453,000,000, 9.7 p.c. above the estimate of \$1,324,600,000 for 1961 and 12 p.c. higher than the average of \$1,297,100,000 for the five-year period 1957-61. Total farm net income, which takes into account changes in inventories of grains and livestock, amounted to \$1,630,300,000. This is in contrast with the estimate of \$1,044,000,000 for 1961 and the average of \$1,195,900,000 for the 1957-61 period.

Subsection 1.—Cash Income from the Sale of Farm Products, 1962

During 1962, cash income to Canadian farmers from farming operations reached an all-time high of \$3,149,400,000, an amount 6.6 p.c. above the previous record of \$2,954,000,000 established a year earlier and 13.4 p.c. above the 1960 estimate of \$2,776,700,000. These estimates include cash income from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, net cash advances on farm-stored grains in Western Canada, and deficiency payments made under the provisions of the Agricultural Stabilization Act.

The more important contributions to the gain in 1962 were made by increased returns from the deliveries of wheat, oats, cattle, calves, hogs and poultry products, larger participation payments on previous years' grain crops, and increased net advances on farm-stored grains in Western Canada. Lesser contributions were made by rye, vegetables and dairy products and the main items for which income was lower were barley, rapeseed and tobacco. All provinces shared in the increase. On a percentage basis, the provincial gains amounted to: less than 1 p.c. for Nova Scotia; nearly 2 p.c. for New Brunswick; between 4 p.c. and 5 p.c. for Prince Edward Island, Quebec, Ontario, Manitoba and Alberta; 10 p.c. for British Columbia; and 14 p.c. for Saskatchewan.

In addition to cash income from farming operations, farmers received, during 1962, \$70,300,000 in the form of supplementary payments paid out under the provisions of the Prairie Farm Assistance Act and the Western Grain Producers' Acreage Payment Plan. This compared with approximately \$35,800,000 paid out under these legislative measures in 1961, most of it under the Prairie Farm Assistance Act. Thus, total farmers' income from farming operations and supplementary payments amounted to \$3,219,700,000 for 1962 compared with \$2,989,700,000 for 1961, an increase of 7.7 p.c. over the latter year and an all-time high.

Field Crops.—Cash income to farmers from field crops, including Canadian Wheat Board payments and cash advances on farm-stored grain, amounted to \$1,229,900,000 in 1962, 10.7 p.c. above the \$1,110,700,000 estimated for 1961, and accounted for 39.1 p.c. of the total farm cash income for the year, excluding supplementary payments. The gain in 1962 reflected higher income from sales of wheat and oats, larger participation payments on previous years' grain crops, and increased net advances on farm-stored grains in Western Canada.

During 1962, the Canadian Wheat Board paid out \$181,100,000 in participation payments on previous years' grains, 36 p.c. more than in the previous year. These payments arise out of the system of grain marketings in Western Canada whereby farmers, at the time of delivery, are given initial payments and certificates stating the quantities and grades delivered. The certificates entitle farmers to share any surpluses accumulated by the Board through subsequent sales of these grains and the farmers' share of these accumulated surpluses represents the Canadian Wheat Board payments included in estimates of farm income.

Marketings of wheat for the first nine months of 1962 lagged behind those for the first nine months of a year earlier as a result of the small 1961 crop. However, the large crop of 1962 and the availability of elevator space permitted farmers to deliver sufficient grain during the last quarter of 1962 to offset the earlier reduction in marketings and provide a total delivery figure for the year slightly above that for 1961. This, together with an increase on Mar. 1, 1962 of 10 cents per bushel in the initial delivery payment, resulted in a total income from wheat marketings of \$530,800,000, an amount 8.6 p.c. above that for 1961. An increase in oats marketings of nearly 50 p.c. during the year was reflected in cash income from this source of \$35,300,000 as against \$24,700,000 in 1961.

Another important contribution to income from field crops during 1962 was the net advances on farm-stored grains amounting to nearly \$6,000,000. This was a reverse of the situation in 1961 when repayments exceeded advances by \$34,500,000. Of those crops for which lower income was estimated in 1962, the most important were barley, rapeseed and tobacco. A substantial reduction in marketings accounted for most of the decline in cash receipts for barley and rapeseed, and reduced income from tobacco reflected very slow or entirely halted sales at Ontario auctions in the autumn.

Livestock and Animal Products.—During 1962, farmers in Canada received a record high return from the sale of livestock and animal products of an estimated \$1,883,200,000, an amount 4.2 p.c. above the previous all-time high of \$1,807,800,000 received in 1961. Income from this source represented 59.8 p.c. of the total farm cash income for the year, excluding supplementary payments.

Income in 1962 was higher for cattle, calves, hogs, and poultry and dairy products but lower for sheep and lambs. That from cattle and calves reached an all-time high of \$677,900,000, an amount 7.8 p.c. above the previous high of \$628,800,000 established in 1961. However, since marketings were practically unchanged from those of 1961, the increase in returns from this source was attributable entirely to higher prices. The increase in income from sales of hogs—from \$317,700,000 in 1961 to \$329,000,000 in 1962—resulted from increased prices and slightly higher marketings. Higher prices of poultry meat were responsible for much of the gain in income from poultry products—from \$283,000,000 to \$294,800,000—and slight increases in both marketings and prices of dairy products brought income from this source to \$538,800,000, nearly \$5,000,000 over the 1961 level.

6.—Cash Income from the Sale of Farm Products, 1959-62

Item	1959*	1960*	1961	1962
	\$'000	\$'000	\$'000	\$'000
Grains, Seeds and Hay	717,274	740,120	797,831	919,610
Wheat.....	435,260	444,652	488,627	530,761
Wheat participation payments.....	72,662	70,640	122,330	152,523
Oats.....	22,887	24,248	24,669	35,266
Oats participation payments.....	2,072	3,153	8,928	4,301
Barley.....	86,833	69,326	64,713	53,442
Barley participation payments.....	6,121	5,335	2,022	24,244
Canadian Wheat Board net cash advance payments.....	2,472	21,040	-34,538	5,916
Rye.....	5,175	4,411	4,946	8,809
Flaxseed.....	49,671	41,990	49,860	47,672
Rapeseed.....	—	12,943	17,047	10,127
Soybeans.....	—	10,035	12,649	12,457
Corn.....	22,200	22,108	21,866	24,331
Clover and grass seed.....	10,693	8,904	11,541	8,617
Hay and clover.....	1,228	1,335	3,171	1,144
Vegetables and Other Field Crops	212,762	241,110	227,292	224,571
Potatoes.....	43,843	61,090	38,101	36,777
Vegetables.....	66,231	70,770	73,914	78,649
Sugar beets.....	13,004	12,808	12,525	13,706
Tobacco.....	89,684	96,442	102,752	95,439
Livestock and Poultry	1,045,192	985,427	1,100,136	1,170,884
Cattle and calves.....	551,731	563,034	628,842	677,915
Sheep and lambs.....	10,626	11,212	11,678	10,666
Hogs.....	345,034	277,590	317,745	328,985
Poultry.....	137,801	133,591	141,871	153,318
Dairy Products	514,208	517,752	533,978	538,752
Fruits	43,057	52,081	53,797	52,030
Other Principal Farm Products	151,321	153,318	157,129	156,438
Eggs.....	139,782	137,484	141,103	141,489
Wool.....	2,887	3,074	3,003	2,755
Honey.....	5,231	5,379	5,403	4,783
Maple products.....	6,421	7,381	7,620	7,411
Miscellaneous Farm Products	53,133	35,427	35,899	37,655
Forest Products	32,901	30,093	27,341	26,580
Fur Farming	18,342	16,625	20,000	20,600
Deficiency Payments—				
Eggs.....	—	2,063	15	577
Sugar beets.....	—	2,707	—	733
Potatoes.....	—	—	33	957
Totals, Cash Income from Farm Products	2,791,190	2,776,723	2,953,951	3,149,387
Supplementary Payments.....	22,087	77,204	35,766	70,313
Totals, Cash Income	2,813,277	2,853,927	2,989,717	3,219,700

7.—Cash Income from the Sale of Farm Products, by Province, 1959-62

Province	1959*	1960*	1961	1962
	\$'000	\$'000	\$'000	\$'000
Prince Edward Island.....	28,307	29,159	23,857	25,005
Nova Scotia.....	42,786	43,004	45,095	45,435
New Brunswick.....	43,759	50,032	42,227	42,986
Quebec.....	420,276	411,105	437,608	456,921
Ontario.....	855,542	869,285	890,065	931,168
Manitoba.....	230,772	223,308	243,599	255,133
Saskatchewan.....	564,179	550,375	600,212	684,725
Alberta.....	481,141	473,257	534,084	556,927
British Columbia.....	124,448	127,198	137,204	151,087
Totals	2,791,190	2,776,723	2,953,951	3,149,387

Net Income of Farm Operators from Farming Operations.—Two different estimates of farm net income from farming operations are prepared by the Agriculture Division. One is called *realized net income* and is obtained by adding together farm cash income from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This estimate of farm net income represents the amount of income from farming that operators have left for family living or investment after provision has been made for operating expenses and depreciation charges. The second estimate is referred to as *total net income* and is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of grains on farms between the beginning and end of the year. The latter estimate is the one used to calculate the contribution of agriculture to national income.*

It is estimated that for 1962 *realized net income* of farmers from farming operations amounted to \$1,453,000,000, a figure 9.7 p.c. above the estimate of \$1,324,600,000 for 1961, and 12 p.c. higher than the average of \$1,297,100,000 for the five-year period 1957-61. The record high cash income from farm products and the substantial gain in supplementary payments in 1962 more than offset the continued rise in farm operating expenses and depreciation charges; income in kind remained practically unchanged. Increases were estimated for all provinces except Nova Scotia and New Brunswick. On a percentage basis, the provincial gains amounted to: less than 1 p.c. for Quebec; between 6 p.c. and 7 p.c. for Manitoba and Alberta; approximately 9 p.c. for Prince Edward Island and Ontario; and 18 p.c. and 19 p.c. for British Columbia and Saskatchewan, respectively.

For 1962, *total farm net income* was estimated at \$1,630,300,000 compared with the estimate of \$1,044,000,000 for 1961, and an average of \$1,195,900,000 for the five-year period 1957-61. Although cash income from farm products and supplementary payments contributed substantially to the higher total farm net income in 1962, most of the gain can be attributed to a significant increase in farm-held inventories of grains in Western Canada between the beginning and the end of the year, as a result of high production. Although that part of farm net income which is represented by inventories is not readily available for spending, it forms the basis of cash advances in Western Canada and it is part of total production for which estimated total expenses were incurred during the year.

Farm cash income, the most important component of farm net income, and supplementary payments are discussed above. Income in kind, which includes the value of agricultural products consumed in homes on farms where produced and the imputed rental value of farm dwellings, was estimated at \$342,600,000 for 1962, a figure practically unchanged from that of a year earlier. Increases in the imputed rental value of farm dwellings and the value of the consumption of meat almost entirely offset the reduction in the value of other products consumed.

The value of inventory change is obtained by calculating the change in the quantity of grain and the numbers of livestock on farms between the beginning and the end of the year and valuing the differences at average annual prices. The value of inventory change at the end of 1962 was estimated at \$177,300,000 as compared with *minus* \$280,700,000 at the end of the previous year. The estimate for 1962 reflects an increase in the number of cattle and calves on farms and a significant rise in the amount of farm-stored grain resulting from the large crops harvested in that year. Although the livestock population increased between the beginning and end of 1961, the gain was far more than offset by the small 1961 crop and the resulting depletion of farm-held grain inventories.

Farm operating expenses and depreciation charges include farm business costs incurred by farmers regardless of whether they are paid for in cash or accumulated as new debt. As far as possible they exclude outlays for goods and services obtained directly from other

* Information on the methods and concepts used to determine the contribution of agriculture to national income is available in DBS publication *Handbook of Agricultural Statistics, Part II*.

farmers. All subsidy payments are taken into account so that the estimates represent only the net amounts paid by farmers. During 1952 the total of these expenses and depreciation charges reached a high of \$2,109,300,000, 5 p.c. above the \$2,007,800,000 estimated for 1951. With few exceptions, higher expenditures were recorded for each of the items of goods and services included in the estimates of farm operating expenses. The item for which the greatest increase in expenditure in absolute terms occurred was feed and seed; from \$370,000,000 in 1951 this outlay rose to \$395,900,000 in 1952, largely as a result of higher prices of feed. The next most important increase in expenditure was estimated for farm rent which rose from \$54,900,000 to \$78,800,000, reflecting the substantially larger grain crops produced in Western Canada in 1952 and the consequent higher share-rent payments made in this area.

8.—Net Income of Farm Operators from Farming Operations, 1959-62

(Exclusive of Newfoundland)

NOTE.—Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act, payments under the Western Grain Producers' Acreage Payment Regulations and, in 1960, payments under the federal-provincial unthreshed grain assistance policy.

Item	1959 ^a	1960 ^a	1961	1962
	\$'000	\$'000	\$'000	\$'000
1. Cash income.....	2,791,190	2,776,723	2,953,951	3,149,387
2. Income in kind.....	344,464	351,168	342,702	342,590
3. Supplementary payments.....	22,087	77,204	35,766	70,313
4. Realized gross income (Items 1+2+3).....	3,157,741	3,205,095	3,332,419	3,562,290
5. Operating and depreciation charges.....	1,884,578	1,916,358	2,007,771	2,109,293
6. Realized net income (Items 4-5).....	1,273,163	1,288,737	1,324,648	1,452,997
7. Value of inventory changes.....	-73,800	51,627	-280,657	177,313
8. Total gross income (Items 4+7).....	3,083,941	3,256,722	3,051,762	3,739,603
Totals, Net Income (Items 8-5).....	1,199,363	1,340,364	1,043,991	1,630,310

9.—Net Income of Farm Operators from Farming Operations, by Province, 1959-62

NOTE.—Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act, payments under the Western Grain Producers' Acreage Payment Regulations and, in 1960, payments under the federal-provincial unthreshed grain assistance policy.

Province	1959 ^a	1960 ^a	1961	1962
	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	—	—	—	—
Prince Edward Island.....	12,218	13,355	6,507	6,372
Nova Scotia.....	14,883	15,041	13,041	10,893
New Brunswick.....	16,639	23,224	10,781	10,523
Quebec.....	191,848	185,686	179,073	179,668
Ontario.....	316,252	331,792	332,156	347,237
Manitoba.....	107,833	115,933	64,569	186,167
Saskatchewan.....	240,862	372,981	137,792	503,795
Alberta.....	242,781	229,200	241,129	317,847
British Columbia.....	56,047	53,152	58,943	67,808
Totals.....	1,199,363	1,340,364	1,043,991	1,630,310

Subsection 2.—Volume of Agricultural Production

This Subsection presents the results of the first large-scale revision of the index of farm production since it was published in August 1919 on the time and weight base of 1935-39=100. The construction of the new index was started in 1948 to measure the change taking place in the total annual physical production of agriculture in each of the

provinces (excluding Newfoundland) and Canada; it is intended that the revised index will continue to serve this purpose. The revisions just completed include: a change to a weight base of 1947-51=100 and a time base of 1949=100; the introduction of all revised data available since the establishment of the index; and an increase in the number of commodities included.

During the period 1935-62, the output of agricultural products has moved upward. Farm production during the past ten years has averaged nearly 30 p.c. above that for the base year 1949 and between 45 p.c. and 50 p.c. above the average for the pre-war period 1935-39 inclusive. The importance of the items included in the index has gradually changed. Livestock production has increased in importance until its percentage contribution to total production is now only slightly below that of grains, the long-time leading contributor. Although dairy production has increased over the years, the rate of increase has been less than that for many other important products with the result that its contribution to total production in percentage terms is less than it was during the pre-war period. Production of poultry products has risen quite significantly in recent years and this is reflected in the greater proportional contribution of these commodities to total agricultural output.

The index for 1962 is estimated at 151.4, the highest recorded for the new series; this compares with the previous high point of 141.4 reached in 1942 and the high peaks of 140.8 in 1952 and 140.3 in 1956. The record established in 1962 can be attributed to the coincidence of large grain crops in Western Canada and high-level outputs of livestock poultry products and dairy products.

10.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1935-62 (1949=100. Exclusive of Newfoundland)

NOTE.—For a description of the revised index, methods and coverage, see DBS publication *Index of Farm Production 1962* (Catalogue No. 21-203).

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1935.....	58.8	124.8	71.4	90.4	86.6	57.9	86.5	90.7	65.3	83.8
1936.....	66.4	123.5	80.0	95.1	77.8	57.6	63.2	72.1	68.1	73.6
1937.....	64.7	131.1	80.2	98.4	89.5	93.5	25.3	85.0	72.2	74.2
1938.....	66.3	126.2	72.0	92.6	90.0	90.6	82.5	133.8	74.4	94.2
1939.....	68.6	122.8	76.9	102.7	94.0	102.5	137.3	134.7	78.7	111.2
1940.....	67.9	116.2	85.5	106.1	88.6	107.1	127.9	156.1	82.7	111.9
1941.....	61.7	104.3	73.4	90.3	87.4	102.6	84.1	104.5	69.6	89.7
1942.....	79.7	123.4	85.1	106.6	102.6	138.9	197.3	192.8	80.5	141.4
1943.....	67.7	115.9	100.9	100.5	77.8	115.6	99.5	100.4	79.6	94.1
1944.....	77.6	134.8	102.7	110.2	95.5	112.2	148.9	129.9	96.8	117.3
1945.....	76.9	96.6	79.7	86.4	85.6	91.0	97.8	99.7	89.2	91.8
1946.....	75.1	118.0	88.4	90.9	93.7	111.9	115.5	129.3	104.1	106.3
1947.....	80.5	101.4	90.6	97.5	90.3	102.8	101.9	123.5	94.0	100.5
1948.....	83.7	103.0	94.5	103.6	95.8	115.8	107.2	122.6	92.3	105.4
1949.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	91.9	102.1	96.0	108.0	98.7	111.0	128.8	115.9	92.0	110.0
1951.....	77.2	97.1	82.1	110.6	101.6	112.7	154.6	148.7	92.9	121.6
1952.....	102.3	108.5	91.3	116.2	112.5	124.0	200.6	168.8	104.0	140.8
1953.....	102.0	104.2	92.1	113.3	105.1	110.0	174.5	160.4	108.2	130.1
1954.....	98.5	109.6	85.1	110.9	102.9	91.0	90.8	122.0	108.2	103.2
1955.....	100.3	114.4	97.4	124.6	108.3	103.6	164.0	146.7	106.5	127.1
1956.....	101.2	115.5	103.2	127.2	113.9	132.2	184.1	165.3	113.7	140.8
1957.....	107.9	113.9	98.1	128.0	118.9	106.8	119.7	133.3	118.9	120.8
1958.....	106.2	110.8	94.5	133.8	132.4	127.1	117.8	150.0	123.2	129.1
1959.....	97.7	116.7	91.8	134.3	125.3	122.8	124.9	153.7	128.8	129.1
1960.....	98.5	117.0	96.8	134.5	128.7	126.2	162.3	150.4	131.8	138.1
1961.....	99.2	122.5	98.1	143.3	136.8	87.7	78.2	149.3	141.7	121.1
1962.....	97.0	125.4	95.0	152.3	140.9	155.7	166.2	162.0	152.0	151.4

Subsection 3.—Field Crops

A wide range of growing conditions occurred throughout Canada during the 1962 season. At planting time, soil moisture reserves were extremely low over most areas of the Prairie Provinces, with the principal exceptions of eastern Manitoba and northern Alberta where excessive rainfall delayed seeding operations and continued throughout the season. In contrast, a large area of Saskatchewan and parts of southern Alberta remained dry. However, in most areas rainfall was frequent, temperatures were below average and crop outturns better than anticipated. Many crops were slow in maturing and much unfavourable weather between mid-August and mid-September resulted in some reduction in quality but the loss caused by early frosts was small. This spell of adverse weather was followed by exceptionally favourable harvesting conditions and late crops ripened well. Most of the harvest was taken off in dry condition.

Ontario and Quebec experienced hot spring weather followed by near drought conditions but these, in turn, were followed by timely rains. With the exception of first-cut hay, most crop yields were excellent. In the Maritimes, excessive moisture during the growing and harvesting season resulted in late maturity of crops and caused much difficulty and loss at harvest time, especially of hay. In British Columbia, generally cool weather prevailed during the spring months, crops developed well and most yields were above those of the previous season.

Substantial declines in production more than offset larger opening stocks of each grain except barley, so that total estimated domestic supplies of the five major grains were 22 p.c. lower in 1961-62 than in 1960-61, amounting to 1,556,900,000 bu. compared with 1,983,600,000 bu. Farmers' marketings of wheat, oats, barley, rye and flaxseed amounted to 408,232,000 bu. in 1961-62, a decrease of 25 p.c. from the comparable total of 545,703,000 bu. in 1960-61. Larger clearances of wheat and increased exports of oats and rye were reflected in total shipments of the five major grains and their products in 1961-62 amounting to 420,735,000 bu. of grain equivalent, a figure relatively unchanged from both the 1960-61 total of 419,324,000 bu. and the ten-year average (1950-51-1959-60) of 422,641,000 bu.

Disappearance of these grains into domestic channels in 1961-62 was estimated at 599,166,000 bu. as against 713,691,000 bu. in 1960-61. Despite this reduction, while exports were relatively unchanged, the effect of substantially reduced domestic supplies was reflected in a 37-p.c. decline in carryover stocks—from 850,548,000 bu. at July 31, 1961 to 537,006,000 bu. at the same date in 1962. During the season, however, total production of the five major grains was estimated at 1,245,000,000 bu. and, as a result, total domestic supplies for the 1962-63 crop year were placed at 1,782,000,000 bu., 14 p.c. higher than the 1961-62 total of 1,557,000,000 bu.

The 1962 potato crop amounted to 45,064,000 cwt. compared with 44,108,000 cwt. in 1961; a 6-p.c. decrease in acreage more than offset a record average yield per acre of 157.5 cwt. New Brunswick retained its position as the largest potato-growing province, the average yield per acre in that province reaching an all-time high of 206.0 cwt. Production of corn for grain, the bulk of which is grown in Ontario, amounted to a next-to-record 32,025,000 bu. in 1962, both acreage and average yield per acre exceeding its 1961 level. Production of tame hay and fodder corn at 26,945,000 tons reached an all-time high in 1962, resulting mainly from a record outturn of hay well distributed across the country. The soybean crop, all of which is grown in Ontario, amounted to 6,608,000 bu. compared with 6,631,000 bu. in the previous season, a 4-p.c. increase in seeded acreage generally offsetting a 4-p.c. decline in the average yield per acre. Rapeseed production, primarily reflecting a 43-p.c. decline in acreage, dropped from the record 1961 level of 561,000,000 lb. to 318,000,000 lb. in 1962.

11.—Acreages, Yields and Prices of Principal Field Crops 1960-62, with Average for 1955-59

(Exclusive of Newfoundland)

Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹	Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹
	'000 acres	bu.	'000 bu.	\$ per bu.	\$'000		'000 acres	bu.	'000 bu.	\$ per bu.	\$'000
Wheat—						Mixed Grains—					
Av. 1955-59.	22,730	20.5	465,618	1.31	608,018	Av. 1955-59.	1,513	42.6	64,427	0.81	52,374
1960.....	24,538	21.1	518,379	1.57	812,838	1960.....	1,366	43.1	58,935	0.83	48,930
1961.....	25,316	11.2	283,394	1.72	486,324	1961.....	1,566	39.2	61,310	0.89	54,775
1962.....	26,893	20.7	557,554	2	2	1962.....	1,522	47.4	72,186	2	2
Oats—						Flaxseed—					
Av. 1955-59.	9,716	38.6	374,764	0.64	238,658	Av. 1955-59.	2,593	8.7	22,544	2.68	60,441
1960.....	9,620	41.4	398,505	0.68	269,385	1960.....	2,508	9.0	22,477	2.75	61,871
1961.....	8,543	33.2	283,965	0.75	212,795	1961.....	2,075	6.9	14,318	3.33	47,612
1962.....	10,591	46.6	493,610	2	2	1962.....	1,415	11.1	15,685	2	2
Barley—						Potatoes—					
Av. 1955-59.	8,971	26.5	237,926	0.79	187,661	Av. 1955-59.	305	132.2	40,297	1.92	77,504
1960.....	6,857	28.2	193,473	0.80	155,161	1960.....	292	146.4	42,696	1.99	85,023
1961.....	5,529	20.4	112,640	1.05	118,810	1961.....	306	144.3	44,108	1.40	61,933
1962.....	5,287	31.4	165,888	2	2	1962.....	286	157.5	45,064	2	2
Rye—						Time Hay—					
Av. 1955-59.	577	16.2	9,362	0.92	8,568	Av. 1955-59.	11,291	1.72	19,412	15.30	296,922
1960.....	561	18.2	10,221	0.87	8,846	1960.....	12,106	1.78	21,595	14.76	318,695
1961.....	561	11.6	6,519	1.07	6,983	1961.....	12,229	1.70	20,812	15.63	325,327
1962.....	668	18.9	12,644	2	2	1962.....	12,370	1.82	22,536	2	2

¹ Gross value of farm production; does not represent cash income from sales. ² Not available at time of going to press; will be published in one of the regularly scheduled crop reports and in the *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962 with Average for 1955-59

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1955-59	1961	1962	Average 1955-59	1961	1962	Average 1955-59	1961
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
Wheat.....	22,730	25,316	26,893	465,618	283,394	557,554	608,018	486,324
Prince Edward Island...	4	4	5	99	114	145	164	192
Nova Scotia.....	1	1	1	31	42	38	50	71
New Brunswick.....	2	2	3	62	62	72	104	104
Quebec.....	15	11	10	350	250	267	565	422
Ontario—								
Winter.....	560	561	450	19,182	19,981	15,795	26,511	28,773
Spring.....	18	20	18	397	466	437	547	671
Manitoba.....	2,325	2,914	3,118	54,000	34,000	82,000	73,128	59,840
Saskatchewan.....	14,494	16,082	17,388	274,000	137,000	344,000	358,466	239,750
Alberta.....	5,253	5,633	5,807	116,200	89,000	112,000	146,824	153,080
British Columbia.....	58	87	94	1,298	2,479	2,800	1,660	3,421
Oats.....	9,716	8,543	10,591	374,764	283,965	493,610	238,658	212,795
Prince Edward Island...	92	98	97	4,014	4,524	5,100	2,983	3,845
Nova Scotia.....	122	38	37	1,891	1,579	1,450	1,756	1,511
New Brunswick.....	122	104	102	5,081	4,077	4,700	3,925	3,384
Quebec.....	1,271	1,299	1,267	44,582	50,401	55,114	38,017	45,865
Ontario.....	1,644	1,784	1,848	78,756	89,879	100,346	57,774	72,802
Manitoba.....	1,557	1,300	1,794	57,200	24,000	89,000	32,544	15,120
Saskatchewan.....	2,537	1,492	2,712	86,600	19,000	110,000	47,724	12,160
Alberta.....	2,362	2,330	2,646	92,400	86,000	123,000	51,352	55,040
British Columbia.....	89	88	88	4,240	4,505	4,900	2,583	3,063

¹ Values for 1962 not available at time of going to press; see footnote 2, Table 11.

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962, with Average for 1955-59—continued

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1955-59	1961	1962	Average 1955-59	1961	1962	Average 1955-59	1961
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
Barley	8,971	5,529	5,287	237,926	112,640	165,888	187,661	118,810
Prince Edward Island.....	1	1	6	43	45	258	44	52
Nova Scotia.....	2	1	1	53	41	47	59	49
New Brunswick.....	5	3	3	144	105	126	153	126
Quebec.....	30	21	19	916	742	718	1,026	876
Ontario.....	102	78	80	3,874	3,342	3,639	3,921	3,509
Manitoba.....	1,639	655	629	38,400	9,000	21,000	32,198	9,450
Saskatchewan.....	3,485	1,839	1,629	87,400	20,000	48,000	68,312	21,000
Alberta.....	3,642	2,867	2,839	105,200	77,000	89,000	80,526	81,620
British Columbia.....	65	63	80	1,896	2,365	3,100	1,422	2,128
Fall Rye	430	472	570	7,380	5,903	11,384	6,802	6,322
Quebec.....	7	4	4	147	86	82	173	99
Ontario.....	76	62	63	1,708	1,540	1,512	1,783	1,679
Manitoba.....	69	78	108	1,270	870	2,740	1,148	940
Saskatchewan.....	191	177	215	2,670	1,250	4,200	2,372	1,362
Alberta.....	85	149	179	1,540	2,100	2,800	1,292	2,184
British Columbia.....	2	2	2	45	57	50	35	58
Spring Rye	147	89	97	1,982	616	1,260	1,766	661
Manitoba.....	8	2	3	112	16	60	102	17
Saskatchewan.....	114	62	64	1,520	400	800	1,365	436
Alberta.....	25	25	30	350	200	400	299	208
All Rye	577	561	668	9,362	6,519	12,644	8,568	6,983
Quebec.....	7	4	4	147	86	82	173	99
Ontario.....	76	62	63	1,708	1,540	1,512	1,783	1,679
Manitoba.....	77	80	111	1,382	886	2,800	1,250	957
Saskatchewan.....	305	239	279	4,190	1,650	5,000	3,737	1,798
Alberta.....	110	174	209	1,890	2,300	3,200	1,591	2,392
British Columbia.....	2	2	2	45	57	50	35	58
Peas	77	66	50	1,264	1,040	827	2,721	2,313
Quebec.....	3	2	2	55	35	35	217	144
Ontario.....	6	3	2	105	59	51	260	151
Manitoba.....	51	47	32	747	700	500	1,281	1,470
Saskatchewan.....	3	2	3	46	33	46	107	58
Alberta.....	8	9	8	179	131	134	499	317
British Columbia.....	6	4	3	133	82	61	357	173
Beans	68	66	65	1,167	1,325	1,423	4,420	5,171
Quebec.....	1	1	1	23	15	17	100	62
Ontario.....	66	65	64	1,143	1,310	1,406	4,320	5,109
Soybeans	218	212	221	6,256	6,631	6,608	12,379	14,920
Ontario.....	245	212	221	6,220	6,631	6,608	12,307	14,920
Buckwheat	114	58	45	2,248	1,217	1,122	2,510	1,390
New Brunswick.....	5	3	4	144	96	117	164	111
Quebec.....	39	18	14	926	452	361	1,149	542
Ontario.....	35	24	18	774	526	434	839	573
Manitoba.....	35	13	10	404	143	210	359	164
Mixed Grains	1,513	1,566	1,522	61,427	61,310	72,186	52,374	54,775
Prince Edward Island.....	58	52	51	2,580	2,548	2,600	2,262	2,472
Nova Scotia.....	10	8	8	415	357	304	423	393
New Brunswick.....	6	7	7	249	267	315	230	267
Quebec.....	176	109	96	6,281	4,316	4,205	6,790	4,748
Ontario.....	902	718	740	43,427	38,034	41,662	35,003	33,090
Manitoba.....	87	157	124	2,631	2,857	5,000	1,802	2,600
Saskatchewan.....	62	136	125	1,599	1,469	4,400	1,067	1,190
Alberta.....	209	374	367	7,057	11,257	13,500	4,647	9,794
British Columbia.....	4	4	4	187	205	200	149	221
Flaxseed	2,593	2,075	1,415	22,544	14,318	15,685	60,441	47,612
Ontario.....	18	21	21	238	381	362	643	1,204
Manitoba.....	662	748	703	5,040	4,300	8,200	13,601	14,190
Saskatchewan.....	1,411	941	389	11,560	5,600	4,100	30,788	18,816
Alberta.....	493	362	299	5,620	4,000	3,000	15,184	13,280
British Columbia.....	8	3	2	86	37	23	223	122

¹ Values for 1962 not available at time of going to press; see footnote 2, Table 11.

**12.—Acreages, Production and Values of Principal Field Crops, by Province, 1961 and 1962,
with Average for 1955-59—concluded**

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1955-59	1961	1962	Average 1955-59	1961	1962	Average 1955-59	1961
	'000 acres	'000 acres	'000 acres	'000 lb.	'000 lb.	'000 lb.	\$'000	\$'000
Sunflower Seed	36	34	23	20,058	24,107	17,360	849	1,052
Manitoba.....	32	30	20	16,103	21,350	15,360	719	961
Alberta.....	—	3	2	—	2,757	2,000	—	91
Rapeseed	389	710	404	275,378	561,000	318,000	8,774	20,179
Manitoba.....	19	29	26	13,498	18,000	23,000	458	648
Saskatchewan.....	328	374	167	231,066	280,000	131,000	7,349	9,800
Alberta.....	42	307	212	30,814	263,000	164,000	967	9,731
Mustard Seed	95	121	121	74,701	37,500	72,900	2,822	1,355
Manitoba.....	2	11	10	209	4,100	7,200	10	184
Saskatchewan.....	—	41	60	—	17,100	35,700	—	470
Alberta.....	95	69	52	74,493	16,300	30,000	2,812	701
Shelled Corn	514	400	421	'000 bu. 30,718	'000 bu. 29,208	'000 bu. 32,025	35,554	35,334
Ontario.....	507	396	418	30,539	29,085	31,893	35,353	35,193
Manitoba.....	7	4	3	178	123	132	201	141
Potatoes	305	306	286	'000 cwt. 40,297	'000 cwt. 44,108	'000 cwt. 45,064	77,504	61,933
Prince Edward Island...	44	46	39	7,534	7,623	6,475	11,750	6,937
Nova Scotia.....	10	8	7	1,433	1,053	932	2,860	1,727
New Brunswick.....	46	54	50	8,662	10,163	10,300	12,988	9,044
Quebec.....	93	80	72	9,813	9,516	9,079	20,441	14,783
Ontario.....	54	52	50	7,112	9,819	9,581	15,497	15,383
Manitoba.....	16	20	23	1,274	767	2,622	2,504	1,802
Saskatchewan.....	14	12	13	881	357	975	2,283	1,071
Alberta.....	18	21	22	1,683	2,545	3,100	3,738	5,395
British Columbia.....	10	12	11	1,905	2,266	2,000	5,443	5,824
Field Roots	36	27	26	'000 tons 391	'000 tons 288	'000 tons 282	8,419	4,850
Prince Edward Island...	6	4	3	80	40	37	1,358	770
Nova Scotia.....	3	2	2	51	28	29	1,284	553
New Brunswick.....	3	2	2	32	17	18	804	332
Quebec.....	9	7	7	68	49	49	1,805	980
Ontario.....	15	12	12	160	154	149	3,168	2,215
Tame Hay	11,291	12,229	12,370	19,412	20,812	22,536	296,922	325,321
Prince Edward Island...	201	179	180	356	331	298	4,597	4,634
Nova Scotia.....	296	234	228	613	512	465	10,549	7,424
New Brunswick.....	374	287	282	696	545	545	9,849	7,630
Quebec.....	3,464	3,312	3,344	5,962	6,094	6,320	92,154	91,410
Ontario.....	3,278	3,251	3,249	6,433	7,678	6,368	90,040	103,031
Manitoba.....	713	1,004	1,045	1,239	904	2,090	14,741	15,821
Saskatchewan.....	785	1,052	1,020	1,016	694	1,550	14,812	13,181
Alberta.....	1,829	2,477	2,625	2,521	3,171	4,000	41,202	63,421
British Columbia.....	351	403	396	777	883	900	18,978	18,761
Fodder Corn	375	360	367	3,637	4,054	4,409	17,527	21,941
Quebec.....	68	55	51	626	581	627	3,997	3,481
Ontario.....	282	269	272	2,854	3,296	3,457	12,409	16,941
Manitoba.....	21	31	38	108	125	260	708	1,181
Saskatchewan.....	2	2	2	5	2	6	65	3
British Columbia.....	3	3	4	44	50	59	349	301
Sugar Beets	87	85	85	1,098	1,106	1,106	15,521	14,511
Quebec.....	6	8	11	68	113	147	953	1,641
Ontario.....	24	16	13	329	279	229	3,998	2,421
Manitoba.....	21	21	22	208	188	197	2,918	3,231
Alberta.....	37	40	40	493	525	533	7,652	7,721

¹ Values for 1962 not available at time of going to press; see footnote 2, Table 11.² Fewer than 500 acres

13.—Acreages and Production of Grain in the Prairie Provinces, 1956-62

Grain	1956	1957	1958	1959	1960	1961	1962
ACREAGES							
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
Wheat.....	22,064	20,881	21,480	23,970	23,900	24,629	26,313
Oats.....	7,422	5,633	5,810	5,626	6,344	5,122	7,152
Barley.....	8,181	9,209	9,104	7,700	6,680	5,361	5,097
Rye.....	452	465	481	458	490	493	599
Flaxseed.....	3,010	3,462	2,526	2,026	2,481	2,051	1,391
PRODUCTION							
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Wheat.....	551,000	371,000	372,000	430,000	498,000	260,000	538,000
Oats.....	343,000	171,000	186,000	191,000	244,000	129,000	322,000
Barley.....	262,000	209,000	231,000	209,000	187,000	106,000	158,000
Rye.....	6,350	6,300	5,600	6,760	8,560	4,836	11,000
Flaxseed.....	34,600	18,900	22,000	16,900	22,000	13,900	15,300

Stocks of Grain in Canada.—Table 14 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1960-62, with averages for the five-year periods 1950-54 and 1955-59. Stocks in Canada are separated into those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

14.—Carryover of Canadian Grain as at July 31, 1960-62, with Averages for 1950-54 and 1955-59

NOTE.—Figures for individual years before 1960 will be found in the corresponding table of previous editions of the Year Book.

Grain and Year	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
Av. 1950-54.....	304,088,145	303,087,359	227,189,959	75,897,400	73,600,000	113,508,787
Av. 1955-59.....	607,664,667	607,347,244	401,923,244	215,024,000	211,600,000	235,770,759
1960.....	599,588,136	599,588,136	455,888,136	143,700,000	142,000,000	260,945,004
1961.....	607,840,667	607,840,667	437,390,667	170,450,000	168,000,000	244,893,302
1962.....	391,058,273	391,058,273	331,888,273	59,170,000	56,000,000	160,966,460
Oats—						
Av. 1950-54.....	103,723,076	102,717,439	34,956,239	67,761,200	55,500,000	20,442,787
Av. 1955-59.....	140,636,549	140,451,508	43,511,508	96,540,000	78,800,000	28,289,269
1960.....	100,827,492	100,827,492	20,827,492	80,000,000	56,000,000	15,278,425
1961.....	115,153,740	115,153,740	21,453,740	93,700,000	75,000,000	11,192,401
1962.....	79,066,164	79,066,164	22,166,164	56,900,000	36,000,000	14,029,060
Barley—						
Av. 1950-54.....	82,186,470	82,028,552	44,888,752	37,139,800	36,200,000	24,153,330
Av. 1955-59.....	118,306,634	118,183,588	60,532,588	58,251,000	56,000,000	37,528,726
1960.....	128,469,650	128,469,650	58,469,650	70,000,000	68,000,000	42,758,000
1961.....	112,557,260	112,262,633	52,457,260	60,100,000	58,000,000	29,376,809
1962.....	57,824,054	57,824,054	31,544,054	26,280,000	24,000,000	17,615,208
Rye—						
Av. 1950-54.....	11,656,052	11,000,586	6,136,186	4,864,400	4,786,000	2,031,544
Av. 1955-59.....	13,557,828	13,327,663	5,078,663	8,159,000	7,820,000	2,327,160
1960.....	6,763,391	6,581,640	2,781,640	3,800,000	3,600,000	1,864,827
1961.....	7,417,007	7,417,007	4,817,007	2,600,000	2,400,000	1,931,297
1962.....	3,788,786	3,717,786	2,598,786	1,190,000	1,150,000	733,490
Flaxseed—						
Av. 1950-54.....	3,273,720	3,273,720	2,285,920	987,800	965,000	417,047
Av. 1955-59.....	5,068,048	5,068,048	3,752,448	1,315,600	1,296,000	913,866
1960.....	4,824,392	4,824,392	4,064,392	760,000	750,000	1,191,891
1961.....	7,579,801	7,579,801	6,169,801	1,410,000	1,400,000	1,254,024
1962.....	5,268,927	5,268,927	3,948,927	1,320,000	1,300,000	1,266,994

Subsection 4.—Livestock and Poultry

Livestock.—Two main features of the livestock industry in 1962 as compared to 1961 were higher prices, especially for cattle and hogs, and larger domestic supplies of feed because of a better grain crop in Western Canada. As a result, there was a substantial increase in the value of livestock marketed through commercial channels. The estimated value of total sales to public stockyards, direct shipments to packing plants and direct on export amounted to \$910,400,000, an increase of \$76,900,000 or 9 p.c. over 1961. The higher prices more than offset the reduction in marketings of cattle, sheep and lambs.

Cattle and calves on farms at June 1, 1962 were estimated at 12,075,000, an increase of 1.2 p.c. over the 1961 Census total of 11,933,700 and an all-time high. There was an increase of 3.4 p.c. in Eastern Canada but a decrease of 0.7 p.c. in the west. Beef cow numbers continued their advance as did steers and calves but other classes decreased slightly. Between 1953 and 1961 total cattle numbers increased about 9 p.c., beef cows increased 24 p.c. and milk cows decreased slightly. Total sheep and lambs at June 1, 1962 were estimated at 1,433,000 head, down 7.4 p.c. from the June 1961 Census total of 1,548,200. In the five years between censuses, sheep numbers decreased by 25.7 p.c. in Eastern Canada but increased by 23.1 p.c. in the western provinces. Hog numbers in Canada at June 1, 1962 at 4,973,000 were down 6.7 p.c. from the June 1961 Census total of 5,331,200; a decrease of 22.5 p.c. in Western Canada was partly compensated for by an increase of 8.1 p.c. in the eastern provinces. Horse numbers continued to decline and were estimated at 477,200 at June 1, 1962, 6.5 p.c. below the year-earlier Census total of 510,600. These comparisons relate only to nine provinces, being exclusive of Newfoundland and the Territories.

15.—Livestock on Farms, by Province, as at June 1, 1961 and 1962

Province and Item	1961 ¹ No.	1962 No.	Province and Item	1961 ¹ No.	1962 No.
Newfoundland—			Manitoba—		
Horses.....	1,152	..	Horses.....	50,798	46,000
Milk cows ²	2,760	..	Milk cows ²	195,869	188,000
Other cattle.....	4,560	..	Other cattle.....	799,691	794,000
Sheep.....	15,320	..	Sheep.....	81,325	76,000
Swine.....	1,554	..	Swine.....	431,462	331,000
Prince Edward Island—			Saskatchewan—		
Horses.....	7,867	7,000	Horses.....	110,314	98,000
Milk cows ²	39,589	38,500	Milk cows ²	241,113	229,000
Other cattle.....	81,470	82,500	Other cattle.....	1,879,994	1,851,000
Sheep.....	23,926	22,000	Sheep.....	188,961	174,000
Swine.....	54,873	49,000	Swine.....	640,801	429,000
Nova Scotia—			Alberta—		
Horses.....	8,917	8,000	Horses.....	113,222	109,000
Milk cows ²	64,047	62,000	Milk cows ²	287,932	280,000
Other cattle.....	99,643	101,000	Other cattle.....	2,591,467	2,583,000
Sheep.....	64,654	58,000	Sheep.....	496,882	445,000
Swine.....	46,856	52,000	Swine.....	1,469,969	1,200,000
New Brunswick—			British Columbia—		
Horses.....	9,317	8,200	Horses.....	23,907	25,000
Milk cows ²	67,306	64,000	Milk cows ²	91,889	92,000
Other cattle.....	92,853	92,000	Other cattle.....	369,887	394,000
Sheep.....	53,896	50,000	Sheep.....	102,816	98,000
Swine.....	47,126	45,000	Swine.....	41,628	42,000
Quebec—			Yukon and N.W.T.—		
Horses.....	97,430	91,000	Horses.....	233	..
Milk cows ²	1,006,744	1,032,000	Milk cows ²	16	..
Other cattle.....	908,486	924,000	Other cattle.....	190	..
Sheep.....	194,655	171,000	Sheep.....	3	..
Swine.....	912,125	970,000	Swine.....	2	..
Ontario—			Totals—		
Horses.....	88,864	85,000	Horses.....	512,021	477,200
Milk cows ²	992,396	970,000	Milk cows ²	2,989,661	2,953,500
Other cattle.....	2,123,282	2,298,000	Other cattle.....	8,951,523	9,119,500
Sheep.....	341,086	339,000	Sheep.....	1,563,534	1,433,000
Swine.....	1,686,340	1,855,000	Swine.....	5,332,736	4,973,000

¹ Census.² Cows and heifers, two years old or over, kept for milk purposes.

16.—Average Value per Head of Farm Livestock, by Province, 1961 and 1962

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	1961 ^a	1962	Province and Item	1961 ^a	1962
	\$	\$		\$	\$
Prince Edward Island—			Manitoba—		
Horses.....	120	122	Horses.....	115	115
All cattle.....	112	115	All cattle.....	136	145
Milk cows ¹	170	174	Milk cows ¹	195	208
Other cattle.....	84	87	Other cattle.....	122	130
Sheep.....	14	14	Sheep.....	15	14
Swine.....	26	28	Swine.....	25	26
Nova Scotia—			Saskatchewan—		
Horses.....	139	151	Horses.....	95	99
All cattle.....	121	123	All cattle.....	134	139
Milk cows ¹	171	171	Milk cows ¹	198	205
Other cattle.....	88	94	Other cattle.....	125	131
Sheep.....	14	15	Sheep.....	15	14
Swine.....	28	27	Swine.....	23	27
New Brunswick—			Alberta—		
Horse.....	167	174	Horses.....	103	105
All cattle.....	115	113	All cattle.....	133	138
Milk cows ¹	163	158	Milk cows ¹	206	210
Other cattle.....	80	82	Other cattle.....	125	130
Sheep.....	15	14	Sheep.....	14	14
Swine.....	28	27	Swine.....	25	26
Quebec—			British Columbia—		
Horses.....	195	209	Horses.....	122	125
All cattle.....	128	134	All cattle.....	137	137
Milk cows ¹	174	182	Milk cows ¹	215	200
Other cattle.....	77	80	Other cattle.....	117	123
Sheep.....	13	14	Sheep.....	17	18
Swine.....	28	28	Swine.....	28	23
Ontario—			Totals—		
Horses.....	163	165	Horses.....	133	139
All cattle.....	155	157	All cattle.....	135	142
Milk cows ¹	228	229	Milk cows ¹	199	203
Other cattle.....	120	127	Other cattle.....	117	123
Sheep.....	18	19	Sheep.....	15	16
Swine.....	30	31	Swine.....	27	28

^a Cows and heifers, two years old or over, kept for milk purposes.

The federal Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1953 are given in Table 17. Local wholesale butch-erings and slaughtering carried out by retail butchers and by farmers for their own use are not included. Actually, the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 17 are fairly inclusive. The slaughtering and meat packing industry is dealt with in its proper relation to all other manufacturing enterprises in Chapter XIV of this volume. On a gross value basis it normally ranks among the four largest manufacturing industries in Canada but it owes its importance to the value of raw products obtained from the farmer and the rancher rather than to the value added by the manufacturing process.

There were slightly fewer cattle slaughtered in inspected establishments in 1962 than in 1961, the number being down by 0.7 p.c. Slaughtering of calves, on the other hand, were up 2.8 p.c. and of hogs 3.1 p.c., but sheep and lambs registered the considerable decline of 10.5 p.c.

Price movements in 1962 are indicated by the annual average calculation of prices on the Toronto, Montreal, Winnipeg and Edmonton markets as shown in Table 44, p. 472.

17.—Livestock Slaughtered at Inspected Establishments 1953-62, and by Month 1961 and 1962

(Exclusive of Newfoundland)

Year and Month	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.
1953.....	1,469,406	740,723	543,371	4,611,312
1954.....	1,635,008	820,506	562,555	4,679,214
1955.....	1,702,108	828,658	591,566	5,543,787
1956.....	1,874,363	891,615	599,974	5,548,289
1957.....	1,986,251	887,102	581,903	4,971,477
1958.....	1,889,280	784,767	548,976	5,963,928
1959.....	1,744,185	676,571	569,746	8,020,766
1960.....	1,941,703	712,100	562,678	6,182,315
1961.....	2,041,473	690,286	633,347	5,849,875
1962.....	2,028,159	710,229	567,463	6,031,933
1961				
January.....	151,761	34,938	35,038	433,276
February.....	141,650	35,891	31,121	432,194
March.....	168,513	73,846	37,107	563,933
April.....	152,853	83,853	22,568	489,318
May.....	149,149	76,895	20,618	428,862
June.....	202,696	70,028	33,583	515,741
July.....	169,221	48,847	33,994	398,624
August.....	168,942	46,521	46,680	401,209
September.....	219,348	63,637	110,116	564,967
October.....	174,758	58,094	115,666	499,901
November.....	174,429	54,685	87,764	542,184
December.....	168,153	43,051	59,092	579,666
Totals, 1961.....	2,041,473	690,286	633,347	5,849,875
1962				
January.....	151,214	36,545	36,833	529,363
February.....	147,141	36,418	30,182	512,192
March.....	185,635	69,913	25,788	667,077
April.....	144,348	80,207	18,648	513,185
May.....	152,865	78,866	16,368	468,103
June.....	194,306	73,589	23,687	534,859
July.....	158,143	49,253	28,555	383,079
August.....	163,159	50,272	50,515	394,947
September.....	205,132	69,390	100,919	531,455
October.....	167,559	60,660	92,711	477,399
November.....	180,423	59,208	91,446	494,260
December.....	178,234	45,908	51,811	526,014
Totals, 1962.....	2,028,159	710,229	567,463	6,031,933

Poultry.—Poultry on farms and their values are given in Table 18; production and consumption of poultry meat are included in Table 19.

18.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1960-62

NOTE.—Figures given in this table for 1960 and 1961 have been revised since the publication of the 1962 Year Book; figures on a comparable basis are available from DBS for the years 1957-59.

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		All Poultry	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
Newfoundland.....	..	..	..	..	..	..	..	..	..	..
Prince Edward Is...1960	588	563	20	105	7	23	5	10	620	701
1961	509	493	12	60	6	20	3	5	529	578
1962	440	436	10	52	6	22	2	4	458	514
Nova Scotia.....1960	2,037	2,393	32	161	2	9	1	2	2,072	2,565
1961	2,185	2,520	44	239	2	7	1	3	2,232	2,769
1962	2,015	2,361	38	189	1	4	1	2	2,055	2,556
New Brunswick....1960	1,054	1,251	25	134	2	8	2	5	1,083	1,398
1961	1,040	1,213	34	189	2	6	1	2	1,076	1,410
1962	1,070	1,276	25	144	1	4	1	3	1,097	1,427
Quebec.....1960	11,485	11,098	630	3,112	9	32	52	105	12,176	14,347
1961	12,935	12,021	732	3,572	7	27	57	116	13,731	15,736
1962	12,680	12,603	625	2,719	8	28	54	104	13,367	15,454
Ontario.....1960	24,808	23,568	2,200	10,714	89	310	118	224	27,215	34,816
1961	24,708	23,500	2,745	13,204	70	254	122	236	27,645	37,194
1962	23,485	22,594	2,800	12,544	68	240	150	279	26,503	35,657
Manitoba.....1960	6,400	4,439	880	2,957	77	192	49	71	7,406	7,659
1961	6,267	4,624	1,145	3,915	84	224	38	57	7,534	8,820
1962	5,465	4,068	970	3,356	70	182	25	38	6,530	7,644
Saskatchewan.....1960	7,060	4,406	1,000	3,240	40	108	58	89	8,158	7,843
1961	6,925	4,632	1,245	4,406	45	129	56	92	8,270	9,259
1962	5,850	3,988	860	2,993	40	118	45	77	6,795	7,176
Alberta.....1960	8,820	5,966	915	3,395	85	230	85	134	9,905	9,725
1961	9,205	6,420	1,184	4,783	90	252	93	150	10,572	11,605
1962	8,370	6,010	820	3,223	80	241	80	137	9,350	9,611
British Columbia...1960	5,009	5,248	454	2,438	10	40	25	54	5,498	7,780
1961	5,610	5,679	528	2,496	10	34	27	49	6,174	8,258
1962	5,540	6,102	500	2,775	9	35	25	49	6,074	8,961
Totals.....1960	67,261	58,932	6,156	26,256	321	952	395	694	74,133	86,834
1961	69,384	61,102	7,668	32,864	314	953	397	710	77,764	95,629
1962	64,915	59,438	6,648	27,995	283	874	383	693	72,229	89,000

19.—Production and Domestic Disappearance of Poultry Meat, 1960-62

(Eviscerated weight)

Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
1960:				
Fowl and chickens.....	357,939	387,061	372,077	20.8
Turkeys.....	107,644	124,128	113,548	6.4
Geese.....	2,801	2,930	2,794	0.2
Ducks.....	4,092	6,066	5,773	0.3
Totals, 1960.....	472,476	520,175	494,192	27.7
1961				
Fowl and chickens.....	416,387	441,548	420,147	23.0
Turkeys.....	143,831	158,936	138,807	7.6
Geese.....	2,944	3,016	2,809	0.2
Ducks.....	4,041	5,722	5,201	0.3
Totals, 1961.....	567,203	609,222	566,964	31.1

19.—Production and Domestic Disappearance of Poultry Meat, 1960-62—concluded

Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
1962				
Fowl and chickens.....	411,513	437,638	425,899	22.9
Turkeys.....	147,155	169,833	143,137	7.7
Geese.....	2,931	3,038	2,730	0.1
Ducks.....	4,379	6,065	5,760	0.3
Totals, 1962.....	565,978	616,574	577,526	31.0

Subsection 5.—Dairying

Milk production in 1962 reached a new record at 19,303,000,000 lb., 0.3 p.c. higher than in 1961. Only three provinces contributed to the increase—Quebec, Ontario and Manitoba—and most of it was utilized for fluid consumption. Of the total milk produced, 58.9 p.c. was used for factory-made dairy products, 30.8 p.c. was sold in fluid form and 10.3 p.c. was used for all purposes on farms.

20.—Production and Utilization of Milk, by Province, 1960-62

Province and Year	Milk Used in Manufacture		Milk Otherwise Used			Total Milk Production
	On Farms ¹	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1960	2,223	160,213	27,339	22,550	13,273	225,598
.....1961	2,153	169,942	27,088	23,790	14,115	237,088
.....1962	1,803	172,718	27,466	22,410	10,312	234,709
Nova Scotia.....1960	12,987	124,179	194,244	47,490	19,290	398,190
.....1961	12,191	133,437	196,865	42,690	17,512	402,695
.....1962	8,213	124,106	199,885	42,140	23,050	397,394
New Brunswick.....1960	19,141	195,549	157,370	40,570	27,180	439,810
.....1961	19,820	201,645	161,454	39,200	24,732	446,851
.....1962	15,256	189,773	165,968	39,250	24,264	434,511
Quebec.....1960	23,728	3,926,354	1,722,536	287,100	219,130	6,178,848
.....1961	19,984	4,252,715	1,753,629	281,400	233,520	6,541,248
.....1962	19,141	4,273,488	1,787,587	277,500	252,480	6,610,196
Ontario.....1960	15,070	3,652,196	2,148,655	222,800	225,900	6,264,621
.....1961	10,086	3,868,549	2,162,011	215,900	249,700	6,506,246
.....1962	7,138	3,910,112	2,232,453	212,300	269,400	6,631,403
Manitoba.....1960	29,718	625,046	321,845	95,800	54,720	1,127,129
.....1961	25,342	640,668	320,388	86,040	56,510	1,128,948
.....1962	19,398	642,541	322,544	84,860	63,390	1,132,733
Saskatchewan.....1960	57,681	698,002	338,730	177,300	65,490	1,337,203
.....1961	52,182	705,801	343,645	170,400	72,470	1,344,498
.....1962	42,751	654,808	342,952	164,000	78,010	1,282,521
Alberta.....1960	52,650	1,014,576	365,401	146,400	57,110	1,636,137
.....1961	43,664	1,097,169	369,307	145,000	65,250	1,720,390
.....1962	38,423	1,042,720	383,291	139,200	63,560	1,667,194
British Columbia.....1960	9,734	329,692	475,261	32,530	30,670	877,857
.....1961	8,424	363,878	479,500	31,710	33,790	917,302
.....1962	5,849	354,543	487,494	31,370	32,860	912,116
Totals.....1960	222,932	10,725,807	5,751,381	1,072,540	712,763	18,485,423
.....1961	193,546	11,433,804	5,813,887	1,036,130	767,599	19,245,266
.....1962	157,972	11,364,809	5,949,640	1,013,030	817,326	19,302,777

¹ Used in farm butter only.

21.—Farm Values of Milk Production, by Province, 1960-62

Province and Year	Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
	On Farms ¹	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms ²	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1960	60	3,769	1,068	613	807	6,317
1961	58	3,976	1,065	649	877	6,625
1962	42	4,023	1,103	625	788	6,581
Nova Scotia.....1960	333	3,080	9,258	1,425	915	15,011
1961	313	3,276	9,406	1,276	872	15,143
1962	204	3,059	9,455	1,256	996	14,970
New Brunswick.....1960	515	4,533	7,262	1,185	1,429	14,924
1961	534	4,696	7,377	1,152	1,383	15,142
1962	398	4,441	7,590	1,162	1,289	14,880
Quebec.....1960	639	99,128	72,526	8,871	17,071	198,235
1961	538	105,678	73,830	8,611	18,660	207,317
1962	474	105,582	75,126	8,436	19,635	209,253
Ontario.....1960	406	89,592	95,434	6,550	12,663	204,645
1961	276	92,614	95,727	6,067	12,569	207,253
1962	186	95,632	98,592	5,966	13,514	213,890
Manitoba.....1960	787	13,963	12,682	2,472	3,551	33,455
1961	671	14,281	13,140	2,211	3,615	33,918
1962	489	14,271	13,238	2,181	3,803	33,982
Saskatchewan.....1960	1,479	15,817	14,146	4,681	4,281	40,404
1961	1,338	15,918	14,504	4,482	4,469	40,711
1962	1,060	14,734	14,871	4,264	4,500	39,429
Alberta.....1960	1,350	23,791	15,781	3,836	4,337	49,095
1961	1,120	25,588	16,005	3,857	5,227	51,797
1962	952	24,576	16,568	3,731	5,032	50,859
British Columbia.....1960	241	8,734	26,834	1,021	1,090	37,920
1961	205	9,925	26,654	973	1,170	38,927
1962	138	9,051	27,254	947	1,131	38,521
Totals.....1960	5,810	262,407	254,991	30,654	46,144	600,906
1961	5,053	275,952	257,708	29,278	45,842	616,833
1962	3,943	275,369	263,797	28,568	50,688	622,365

¹ Used in farm butter only.² Includes values of skim milk and buttermilk retained on farms.

Butter production in 1962 amounted to 372,201,000 lb., almost 8,000,000 lb. more than in the previous year. The 1962 total included 361,498,000 lb. of creamery butter, 6,751,000 lb. of dairy or farm-made butter and 3,952,000 lb. of whey butter. The annual per capita consumption of creamery butter increased for the first time since 1956, moving from 15.81 lb. in 1961 to 17.26 lb. in 1962. Stocks on hand at the end of the year totalled 135,538,000 lb., the largest carryover on record; combined with the butter equivalent of butter oil stocks, the carryover was 238,138,000 lb.

Factory cheese production in 1962 was estimated at 130,178,000 lb., 0.9 p.c. lower than in 1961. Peak cheese production occurred in 1942 when the output was 207,431,000 lb. and peak exports in 1945 when they amounted to 135,409,000 lb. Exports of cheese, mostly cheddar, in 1962 amounted to 27,252,000 lb. compared with 19,508,000 lb. in 1961.

22.—Production of Butter and Cheese, by Province, 1960-62

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory ¹
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	—
Prince Edward Island.....1960	5,237	95	18	5,350	1,028
1961 ²	5,808	92	16	5,916	876
1962	5,927	77	24	6,028	891
Nova Scotia.....1960	3,613	555	—	4,168	—
1961 ²	3,926	521	—	4,447	—
1962	3,773	351	—	4,124	—
New Brunswick.....1960	7,238	818	—	8,056	705
1961 ²	7,571	847	—	8,418	562
1962	6,981	652	—	7,633	503
Quebec.....1960	123,731	1,014	291	125,036	42,164
1961 ²	139,330	854	985	141,169	50,297
1962	144,527	818	1,329	146,674	50,049
Ontario.....1960	85,396	644	2,649	88,689	75,018
1961 ²	95,036	431	2,861	98,328	75,835
1962	101,286	305	2,694	104,185	75,152
Manitoba.....1960	24,778	1,270	—	26,048	487 ²
1961 ²	25,278	1,083	—	26,361	551
1962	25,605	829	—	26,434	631
Saskatchewan.....1960	28,012	2,465	—	30,477	292
1961 ²	28,387	2,230	—	30,617	30
1962	27,256	1,827	—	29,083	—
Alberta.....1960	37,338	2,250	7	39,595	1,808
1961 ²	40,917	1,866	7	42,790	1,831
1962	38,928	1,642	5	40,575	1,735
British Columbia.....1960	5,060	416	—	5,476	969 ²
1961 ²	5,880	360	—	6,240	1,168
1962	7,215	250	—	7,465	979
Totals.....1960	320,463	9,527	2,965	332,895	122,745²
1961²	352,133	8,284	3,869	364,286	131,408²
1962	361,498	6,751	3,952	372,201	130,178²

¹ Factory-made cheese includes cheddar and other cheese made from whole milk and cream.

² Amount for "other cheese" are included in Quebec, Ontario and Alberta figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

The output of concentrated whole milk, normally only slightly in excess of domestic requirements, was 1.4 p.c. above those requirements in 1962. Exports dropped off 13.8 p.c. from the 1961 total and per capita consumption increased 2.5 p.c. Skim milk powder production at 192,389,000 lb. was 20,640,000 lb. below the peak production in 1961. Exports declined from 53,090,000 lb. in 1961 to about 35,689,000 lb. in 1962 and domestic disappearance at 133,422,000 lb. in 1962, was 13.0 p.c. below the record high established the previous year.

23.—Production of Concentrated Milk Products, 1958-62
(Exclusive of Newfoundland)

Product	1958	1959	1960	1961 ²	1962
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Concentrated Whole Milk Products.....	361,884	362,984	404,325	393,805	363,605
Condensed milk.....	14,194	14,553	14,420	14,814	16,338
Evaporated milk.....	305,267	302,697	316,950	321,994	287,395
Whole milk powder.....	19,713	20,872	45,829	25,622	23,311
Partly skimmed evaporated milk.....	21,119	21,163	20,178	22,474	24,306
Other whole milk products ¹	1,591	3,699	6,948	8,901	12,250

For footnote, see end of table.

23.—Production of Concentrated Milk Products, 1958-62—concluded

Product	1958	1959	1960	1961*	1962
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Concentrated Milk By-products.....	224,433	220,260	209,898	269,244	260,062
Condensed skim milk.....	3,444	3,814	2,802	1,918	1,822
Evaporated skim milk.....	10,028	7,662	2,769	6,210	5,816
Skin milk powder.....	185,625	176,437	171,969	213,029	192,389
Powdered buttermilk.....	8,028	7,740	8,179	9,833	10,400
Whey powder.....	12,820	16,599	11,037	19,730	18,152
Casein.....	3,430	4,824	8,000	14,024	22,197
Other milk by-products ²	1,058	3,084	5,342	4,500	9,286
Totals.....	586,317	583,244	614,223	663,049	623,667

* Includes malted milk, cream powder, formula milks, whole milk powder of less than 26-p.c. fat, evaporated milk of 2-p.c. fat, concentrated liquid milk and sterilized cream manufactured by fewer than three firms.
² Includes sugar of milk (lactose), condensed buttermilk, concentrated liquid skim milk and special formula skim milk products manufactured by fewer than three firms.

24.—Production of Ice Cream Mix, by Province, 1960-62

Province	1960	1961	1962	Province	1960	1961	1962
	'000 gal.	'000 gal.	'000 gal.		'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	..	..	..	Manitoba.....	1,063	1,156	1,212
P. E. Island.....	126	124	133	Saskatchewan.....	1,139	1,189	1,160
Nova Scotia.....	876	883	910	Alberta.....	1,862	2,016	2,054
New Brunswick.....	540	548	555	British Columbia.....	2,175	2,361	2,398
Quebec.....	5,022	5,266	5,246	Totals.....	20,480	21,421	21,789
Ontario.....	7,677	7,878	8,121				

The estimated consumption of fluid milk and cream, on a milk basis, amounted to 5,397,413,000 pt. in 1962, which was 87,322,000 pt. higher than the 1961 estimate. Daily average consumption per capita was 0.82 pt., the same as in 1961. The estimated consumption of milk and cream is given by province in Table 25 and the domestic disappearance of all dairy products in Table 26.

25.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1960-62

Province and Year	Estimated Consumption	Daily per Capita Consumption	Province and Year	Estimated Consumption	Daily per Capita Consumption
	'000 pt.	pt.		'000 pt.	pt.
Newfoundland.....	..	..	Manitoba.....1960	323,755	0.98
Prince Edward Island.....1960	38,674	1.03	1961	315,061	0.94
1961	39,440	1.03	1962	315,817	0.93
1962	38,663	1.00	Saskatchewan.....1960	400,023	1.20
Nova Scotia.....1960	187,391	0.71	1961	398,485	1.18
1961	185,702	0.69	1962	392,986	1.16
1962	187,616	0.69	Alberta.....1960	396,745	0.84
New Brunswick.....1960	153,442	0.70	1961	398,687	0.82
1961	155,546	0.71	1962	405,032	0.81
1962	159,083	0.72	British Columbia.....1960	393,636	0.67
Quebec.....1960	1,557,857	0.83	1961	396,286	0.67
1961	1,577,542	0.82	1962	402,220	0.66
1962	1,600,841	0.82	Totals.....1960	5,289,860	0.83
Ontario.....1960	1,838,337	0.83	1961	5,310,091	0.82
1961	1,843,342	0.81	1962	5,397,413	0.82
1962	1,895,155	0.82			

26.—Domestic Disappearance of Dairy Products, 1960-62

Product	1960		1961 ¹		1962	
	Total	Per Capita ¹	Total	Per Capita ¹	Total	Per Capita ¹
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Milk and Cream	6,823,921	393.20	6,850,017	385.27	6,962,670	384.68
Milk.....	5,762,614	332.05	5,784,201	325.32	5,861,685	323.85
Cream as milk.....	1,061,307	61.15	1,065,816	59.95	1,100,985	60.83
Cream as product.....	208,425	12.01	210,390	11.83	220,333	12.17
Butter	302,395	16.98	300,316	16.47	331,276	17.84
Creamery.....	289,889	16.27	288,309	15.81	320,442	17.26
Dairy.....	9,527	0.54	8,284	0.46	6,751	0.36
Whey.....	2,979	0.17	3,723	0.20	4,083	0.22
Cheese	128,523	7.21	136,123	7.47	149,854	8.07
Cheddar.....	50,597	2.84	52,624	2.89	60,633	3.27
Process.....	55,176	3.10	57,467	3.15	64,310	3.46
Other.....	22,750	1.27	26,032	1.43	24,911	1.34
Concentrated Whole Milk Products²	359,548	20.18	349,883	19.18	358,499	19.30
Evaporated.....	314,735	17.67	300,715	16.49	302,132	16.27
Condensed.....	14,253	0.80	14,735	0.81	16,107	0.87
Powdered.....	4,899	0.28	3,278	0.18	2,820	0.16
Concentrated Milk By-products³	159,289	8.94	209,605	11.00	189,329	10.20
Evaporated.....	2,767	0.16	6,227	0.34	5,814	0.31
Condensed.....	2,562	0.14	1,979	0.11	1,840	0.10
Powdered.....	122,749	6.89	153,277	8.40	133,422	7.18
All Dairy Products in Terms of Milk—						
Butter.....	7,006,335	393.30	6,940,277	380.54	7,656,316	412.21
Cheese.....	1,251,317	70.24	1,320,410	72.40	1,451,395	78.10
Concentrated.....	835,137	46.88	802,922	44.02	817,445	44.07
Grand Totals⁴	16,613,030	942.71	16,563,643	917.87	17,413,673	947.4

¹ Includes Newfoundland for all manufactured dairy products. ² Includes, in addition to the items listed, malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26-p.c. fat, formula milks, evaporated milk of 2-p.c. fat, and concentrated liquid milk. ³ Includes milk by-product items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products and concentrated liquid skim milk. Since the quantities used for human consumption as livestock feeding cannot be separated, per capita figures include both. ⁴ Includes ice cream mix in terms of milk.

Subsection 6.—Fruits and Vegetables

Fruits.—Commercial fruit growing in Canada is confined almost exclusively rather limited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. The fruit growing districts of Quebec are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lake district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree fruit culture. In most producing areas, particularly in the Annapolis Valley of Nova Scotia, the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia, fruit growing is either the principal or one of the most important forms of agriculture and is very important to the economy of those areas. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are limited largely to Ontario and British Columbia.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island. However, this crop is produced over-

somewhat wider area than are tree fruits. In Nova Scotia, for example, considerable quantities of strawberries are grown in Colchester County and farther north, as well as in the apple producing areas of the Annapolis Valley. In British Columbia most of the strawberries are grown in the Fraser Valley rather than in the predominantly tree-fruit producing area of the Okanagan Valley.

Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area.

Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain lands in these areas. Individuals who harvest the wild berries may undertake to burn the land from time to time for weed control and to effect pruning, dusting is often carried out to control insects, and bees are sometimes introduced to achieve better pollination. A large percentage of the crop is frozen and exported. Some blueberries are picked for sale in other provinces but no statistics of this trade are available. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported.

Canning and processing industries have developed in the fruit growing districts and, although the importance of the processing market varies with different fruits, it provides a valuable outlet for substantial proportions of most Canadian-grown fruit crops.

Tables 27 and 28 show the estimated commercial production of fruit, by kind, for the years 1960-62 and by province for 1957-62.

27.—Estimated Commercial Production and Farm Value of Fruit, 1960-62

Kind of Fruit and Year	Quantity	Weight	Farm Value	Kind of Fruit and Year	Quantity	Weight	Farm Value
	'000 bu.	'000 lb.	\$'000		'000 bu.	'000 lb.	\$'000
Apples—				Cherries (sour)—			
1960.....	14,914	671,130	23,147	1960.....	254	12,700	1,326
1961.....	16,521	743,445	23,077	1961.....	526	26,300	2,307
1962.....	18,069	813,115	..	1962.....	216	10,800	..
Pears—				Strawberries—	'000 qt.		
1960.....	1,528	76,400	3,209	1960.....	26,114	33,880	5,734
1961.....	1,477	73,850	3,101	1961.....	23,022	30,112	5,318
1962.....	1,681	84,050	..	1962.....	20,768	27,198	..
Plums and Prunes—				Raspberries—			
1960.....	467	23,350	970	1960.....	11,899	16,760	3,126
1961.....	578	28,900	1,257	1961.....	9,469	13,103	2,587
1962.....	412	20,600	..	1962.....	8,048	11,320	..
Peaches—				Loganberries—	'000 lb.		
1960.....	2,362	118,100	6,137	1960.....	1,095	1,095	163
1961.....	3,074	153,700	6,674	1961.....	1,203	1,203	167
1962.....	2,348	117,400	..	1962.....	1,112	1,112	..
Apricots—				Grapes—			
1960.....	305	15,270	674	1960.....	113,167	113,167	4,899
1961.....	265	13,250	626	1961.....	85,237	85,237	4,325
1962.....	306	15,300	..	1962.....	88,592	88,592	..
Cherries (sweet)—				Blueberries—			
1960.....	201	10,050	1,893	1960.....	19,604	19,604	2,383
1961.....	306	15,300	2,403	1961.....	18,063	18,063	1,823
1962.....	423	21,150	..	1962.....	18,219	18,219	..

**28.—Value of Commercial Fruit Produced, by Province, 1959-61 with Average
for 1955-59**

(Farm value for unpacked fruit)

Province	Average 1955-59	1959	1960	1961
	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	81	105	197	235
Prince Edward Island.....	259	221	394	396
Nova Scotia.....	2,255	2,404	2,913	4,154
New Brunswick.....	1,062	1,124	1,370	1,404
Quebec.....	5,972	6,924	6,930	5,769
Ontario.....	19,096	19,132	24,150	24,088
British Columbia.....	12,416	13,554	17,877	17,721
Totals.....	41,141	43,464	53,831	53,767

Vegetables.—Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland, Prince Edward Island and Saskatchewan. The Province of Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces and a somewhat smaller range in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers for processing and for sale on the fresh market but do not include acreages or production of vegetables grown for home use on farms or elsewhere.

29.—Estimated Commercial Acreage of Vegetables, by Province, 1960-62, with Average for 1955-59

Province	Av. 1955-59	1960 ¹	1961 ¹	1962 ²
	acres	acres	acres	acres
Nova Scotia ¹	4,082	2,600	2,850	2,740
New Brunswick ¹	1,654	5,200	5,920	8,808
Quebec.....	57,404	63,660	64,890	68,620
Ontario.....	107,566	108,800	106,346	99,850
Manitoba ²	4,148	3,330	3,530	3,530
Alberta ²	11,846	15,280	16,060	16,050
British Columbia.....	15,776	15,140	16,950	16,820
Totals.....	202,476	214,010	216,546	216,418

¹ Prior to 1960, acreages of peas in Prince Edward Island and New Brunswick are included with Nova Scotia in 1960, 1961 and 1962, Prince Edward Island and Nova Scotia acreages of peas are included with New Brunswick.

² Acreages of beans, corn and peas in Manitoba are included with Alberta.

30.—Estimated Commercial Acreage and Production of Vegetables, 1959-61, with Average for 1955-59

Vegetable	Av. 1955-59*		1959*		1960*		1961	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
Asparagus.....	3,800	7,491	3,930	7,564	3,730	6,967	3,750	6,992
Beans ¹	10,740	42,777	11,170	37,529	11,650	43,157	15,950	60,631
Beets.....	3,634	52,533	3,610	58,061	2,550	44,606	2,690	49,022
Cabbage.....	6,912	121,768	7,450	120,163	6,810	127,136	6,700	128,379
Carrots.....	10,372	195,813	12,510	245,315	11,360	283,416	11,770	274,512
Cauliflower.....	2,502	25,157	2,830	25,265	2,830	30,240	2,720	27,260
Celery.....	2,008	46,667	1,380	42,964	1,220	38,968	1,290	45,805
Corn.....	48,318	280,912	54,070	317,161	55,740	330,974	58,410	388,144
Lettuce.....	5,346	56,844	6,110	57,364	5,680	67,460	4,790	53,766
Onions.....	6,298	116,977	7,470	142,785	7,700	173,491	7,950	154,234
Peas ²	49,340	109,147	40,230	89,696	45,670	100,781	48,850	111,696
Spinach.....	1,142	12,629	1,230	14,970	1,210	12,485	1,120	11,570
Tomatoes.....	47,796	691,454	41,230	738,903	39,340	867,658	32,480	786,612

* Estimates apply only to that portion of the crop grown for processing in Quebec, Ontario, Manitoba and Alberta in 1958; in Ontario, Manitoba and Alberta in 1959, 1960 and 1961. ² Estimates apply only to that portion of the crop grown for processing in all provinces for which estimates are made except British Columbia.

Subsection 7.—Other Principal Farm Products

Tobacco.—The chief tobacco growing area of Canada is located in southern Ontario in the counties adjacent to Lake Erie; most of the cigarette tobacco comes from this district. In Ontario as a whole, 122,287 acres of flue-cured or Bright Virginia type tobacco were harvested in 1961. This is the most important type grown in Canada although dark air-cured and fire-cured tobacco as well as cigar tobacco are grown on a limited scale. The only other important production comes from Quebec. In 1961, 5,439 acres of flue-cured tobacco, 4,418 acres of cigar tobacco and 1,224 acres of pipe tobacco were harvested in that province. Recently, small acreages have been successfully grown in Prince Edward Island, Nova Scotia and Manitoba.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past three decades. In 1922, the first year for which comparable figures are available, Canadian annual per capita consumption of cigarettes was 229; by 1959 the annual per capita consumption (calculated on the basis of total population) had increased to 1,939. The figure for 1961 was 2,012.

31.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Province, 1957-61

Year	Quebec			Ontario			Other Provinces		
	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value
	acres	'000 lb.	\$	acres	'000 lb.	\$	acres	'000 lb.	\$
1957.....	9,786	8,333	2,854,000	126,961	156,488	75,716,000	40	44	19,000
1958.....	9,517	8,901	3,255,000	124,557	188,364	86,333,000	52	37	15,000
1959.....	10,275	11,736	4,722,000	117,801	158,120	85,660,000	57	48	21,000
1960.....	11,598	13,914	5,399,000	124,321	200,201	109,272,000	43	52	28,000
1961.....	11,081	11,900	4,156,000	126,718	197,664	101,059,000	118	157	80,000

32.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Main Type, 1957-61

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Value
	acres	lb.	lb.	cts.	\$
Flue-cured.....1957	126,353	1,201	151,743,000	49.2	74,699,000
1958	122,914	1,475	181,290,000	46.5	84,380,000
1959	116,773	1,305	152,385,000	55.4	84,410,000
1960	129,092	1,592	205,514,000	54.6	112,118,000
1961	127,844	1,529	195,441,000	51.6	100,813,000
Burley.....1957	6,000	1,353	8,118,000	32.7	2,658,000
1958	7,299	1,642	11,984,000	34.8	4,168,000
1959	6,192	1,748	10,822,000	36.3	3,931,000
1960	10	1,200	12,000	41.7	5,000
1961	3,681	1,770	6,516,000	37.2	2,426,000
Cigar leaf.....1957	3,300	1,181	3,897,000	24.0	935,000
1958	3,085	1,009	3,122,000	24.5	765,000
1959	4,000	1,306	5,223,000	29.9	1,565,000
1960	5,100	1,303	6,647,000	28.2	1,871,000
1961	4,418	1,264	5,584,000	25.0	1,397,000
Totals¹.....1957	136,787	1,205	164,865,000	47.7	78,589,000
1958	134,126	1,471	197,302,000	45.4	89,693,000
1959	128,133	1,326	169,904,000	53.2	90,403,000
1960	135,962	1,575	214,167,000	53.6	114,699,000
1961	137,917	1,521	209,721,000	50.2	105,295,000

¹ Includes other types not specified.

Sugar Beets and Beet Sugar.—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined largely to the southwestern section of the province. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.

33.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Beet Sugar Shipments 1955-62

Year	Sugar Beets					Beet Sugar (All Types)	
	Harvested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Value	Shipments	Value
	acres	tons	tons	\$	\$'000	'000 lb.	\$'000
1955.....	81,908	11.98	981,014	13.42	13,170	239,576	20,376
1956.....	78,786	11.33	892,872	17.33	15,470	274,807	23,960
1957.....	83,743	12.58	1,053,564	13.24	13,948	243,246	24,480
1958.....	97,800 ^c	13.55 ^c	1,324,870 ^c	14.47	19,177 ^c	300,296	27,210 ^c
1959.....	90,453	13.70	1,239,518	12.78	15,842	307,380	23,150
1960.....	86,128 ^c	12.76 ^c	1,098,673	14.36	15,778	298,111	21,180 ^c
1961.....	84,927 ^c	13.02	1,105,708 ^c	13.13	14,515	283,675	21,530 ^c
1962.....	85,019	12.69	1,078,563	..	..	..	..

Eggs.—The net production of eggs in 1962 amounted to 434,200,000 doz., 4,277,000 doz. more than in 1961. The number of layers was about the same in both years but the rate of lay was 197 eggs per layer in 1961 and 199 per layer in 1962. The farm value of eggs to producers was slightly lower in 1962 than in the previous year, being 35.2 cents compared with 35.7 cents. According to hatchery statistics compiled by the Canada Department of Agriculture, 7.1 p.c. fewer egg-production type chicks were hatched in 1962 than in 1961 and the broiler chick hatch was 4.8 p.c. lower; this was the first time in the history of the broiler industry that there was a year-to-year decrease in the hatch of broiler chicks. On the other hand, the number of broiler-type turkey poult hatched was 14.1 p.c. higher than in 1961, although the hatch of turkeys for mature weights was 9.4 p.c. lower.

34.—Production, Utilization and Value of Farm Eggs, by Province, 1961 and 1962

Province	1961				1962			
	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid ¹	Total Value (Sold and Used)	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid ¹	Total Value (Sold and Used)
	'000	No.	'000 doz.	\$'000	'000	No.	'000 doz.	\$'000
Prince Edward Island.....	292	17,109	4,156	1,364	270	17,931	3,975	1,326
Nova Scotia.....	1,123	19,923	18,513	7,854	1,052	20,379	17,718	7,288
New Brunswick.....	545	18,598	8,373	3,712	570	19,522	9,154	3,956
Quebec.....	4,112	19,695	66,785	26,838	4,362	19,678	70,844	27,319
Ontario.....	10,428	20,822	179,516	65,547	10,604	20,808	182,384	64,767
Manitoba.....	2,355	18,394	35,840	10,079	2,355	18,992	36,998	10,424
Saskatchewan.....	2,272	17,351	32,435	8,846	2,086	17,711	30,351	8,747
Alberta.....	2,793	18,408	42,387	13,632	2,566	18,669	39,370	12,951
British Columbia.....	2,454	20,656	41,918	15,468	2,540	20,667	43,406	15,907
Totals.....	26,374	19,743	429,923	153,340	26,405	19,921	434,200	152,686

¹ Total laid less loss.

Wool.—Canada's wool requirements are met largely by imports which amounted to 54,308,000 lb. (greasy basis) in 1962 and 54,430,000 lb. in 1961. Exports amounted to 3,972,000 lb. in 1962 and 5,067,000 lb. in 1961. The apparent domestic consumption of wool shown in Table 35 is determined on the basis of production, exports and imports but does not take into consideration changes in stocks for which the data are not available. Differences in wool utilization from year to year are therefore probably less marked than is indicated by these figures.

35.—Production and Apparent Consumption of Wool, 1958-62

Item	1958 ¹	1959 ¹	1960 ¹	1961	1962
Shorn Wool—					
Yield per fleece..... lb.	7.3	7.6	7.7	7.8	8.0
Total yield shorn..... '000 lb.	6,107	6,256	6,370	6,169	5,808
Price per pound ¹ cts.	49.7	45.9	47.9	50.2	48.8
Total value of shorn wool..... \$'000	3,038	2,869	3,052	3,094	2,833
Total pulled wool..... '000 lb.	1,279	1,487	1,387	1,287	1,361
Total wool production..... "	7,386	7,743	7,757	7,456	7,169
Apparent consumption..... "	45,593	54,233	53,581	56,819	57,505

¹ Includes Agricultural Stabilization Act payments of 28 cents per lb. in 1958, 21 cents per lb. in 1959, 23 cents per lb. in 1960, 22 cents per lb. in 1961 and 18 cents per lb. in 1962 on qualifying graded wool.

Honey.—Honey statistics have been compiled on an all-Canada basis since 1924; the 45,145,000-lb. production of 1948 was the largest recorded crop. Output in 1961 was 35,030,000 lb. and in 1962, 30,491,000 lb. The decrease in 1962 was attributed to unfavourable weather conditions in the Maritimes and in Western Canada. The number of active beekeepers was considerably below the 1961 total. Bees are kept in some of the fruit growing districts mainly for purposes of pollination.

Honey is produced commercially in all provinces except Newfoundland, about 35 p.c. of the output being accounted for by Ontario.

To facilitate storage, shipment and uniformity of quality, considerable quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces.

36.—Honey and Beeswax Production 1960-62, with Average for 1955-59

Item	Av. 1955-59†	1960	1961	1962
Honey—				
Total production.....'000 lb.	28,078	32,224	35,030	30,491
Average production per colony.....lb.	85	98	104	89
Total value.....\$'000	4,961	5,179	5,351	..
Average price per lb. to producers.....cts.	18	16	15	..
Beeswax—				
Production.....'000 lb.	412	479	520	..
Value.....\$'000	204	215	235	..
Total Value, Honey and Beeswax.....\$'000	5,165	5,394	5,586	..
Beekeepers.....No.	14,186	12,570	11,663	10,520
Bee colonies....."	328,540	327,340	336,910	341,730

37.—Honey Production, by Province, 1960-62, with Average for 1955-59

Province	Av. 1955-59	1960	1961*	1962
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Prince Edward Island.....	68	65	67	32
Nova Scotia.....	161	146	249	132
New Brunswick.....	87	86	85	77
Quebec.....	3,349	2,234	2,971	3,185
Ontario.....	8,281	9,232	9,360	10,922
Manitoba.....	5,297	6,380	6,670	5,051
Saskatchewan.....	3,664	4,515	3,973	2,864
Alberta.....	5,693	7,576	9,580	6,932
British Columbia.....	1,478	1,940	2,075	1,296
Totals.....	28,078	32,224	35,030	30,491

Maple Sugar and Maple Syrup.—Maple syrup is produced in the Provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous both in Canada and in the United States as the centre of the maple products industry. Virtually all of the maple products exported are sent to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.

38.—Estimated Production of Maple Sugar and Maple Syrup, by Province, 1960-63, with Averages for 1955-59

Province and Year	Maple Sugar			Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Average Price per lb.	Value	Quantity	Average Price per gal.	Value	
	lb.	cts.	\$	gal.	\$	\$	\$
Nova Scotia—							
Av. 1955-59.....	13,000	63.6	8,000	5,000	5.54	27,000	35,000
1960.....	14,000	64.0	9,000	3,000	5.53	17,000	26,000
1961.....	14,000	63.0	9,000	4,000	5.41	22,000	31,000
1962.....	7,000	63.0	4,000	3,000	5.46	16,000	20,000
1963.....	11,000	..	..	4,000	..	..	..
New Brunswick—							
Av. 1955-59.....	69,000	57.4	40,000	12,000	4.98	62,000	102,000
1960.....	53,000	68.0	36,000	10,000	5.29	53,000	89,000
1961.....	42,000	59.0	25,000	13,000	5.33	69,000	94,000
1962.....	32,000	59.0	19,000	6,000	5.56	33,000	52,000
1963.....	32,000	..	..	8,000	..	..	..
Quebec—							
Av. 1955-59.....	562,000	45.4	255,000	2,126,000	3.66	7,787,000	8,042,000
1960.....	310,000	47.1	146,000	2,253,000	3.86	8,697,000	8,843,000
1961.....	751,000	47.0	353,000	2,227,000	3.74	8,329,000	8,682,000
1962.....	695,000	49.1	341,000	2,426,000	3.69	8,952,000	9,293,000
1963.....	669,000	..	..	2,488,000	..	..	..
Ontario—							
Av. 1955-59.....	14,000	58.3	8,000	267,000	4.73	1,261,000	1,269,000
1960.....	13,000	63.0	8,000	250,000	5.21	1,302,000	1,310,000
1961.....	24,000	71.0	17,000	319,000	5.04	1,608,000	1,625,000
1962.....	16,000	65.0	10,000	311,000	5.08	1,579,000	1,589,000
1963.....	8,000	..	..	219,000	..	..	..
Totals—							
Av. 1955-59.....	658,000	47.3	311,000	2,410,000	3.79	9,137,000	9,448,000
1960.....	390,000	51.0	199,000	2,516,000	4.00	10,069,000	10,268,000
1961.....	831,000	48.6	404,000	2,563,000	3.91	10,028,000	10,432,000
1962.....	750,000	49.9	374,000	2,746,000	3.85	10,580,000	10,954,000
1963.....	720,000	..	..	2,719,000	..	..	..

Nursery Stock.—Statistics concerning the nursery industry in Canada for recent years are presented in Tables 39 and 40. All nurseries were asked to report quantities sold of stock propagated during these years; stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 300 nurseries reported shipments in 1961. Wholesale value of nursery stock shipments of fruit trees, etc., amounted to \$549,288 in 1961 compared with \$463,289 in 1960, and of ornamental species to \$3,927,979 in 1961 and \$3,637,535 in the previous year.

39.—Nursery Stock Shipments (Domestic), by Type, 1957-61

Classification	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.
Fruit Trees, etc.—					
Apple species.....	309,953	420,588	436,845	300,729	378,093
Tender tree-fruit species.....	300,817	275,542	314,265	256,185	264,197
Small fruit species.....	4,613,054	4,419,675	4,446,224	5,370,022	5,502,671
Other species.....	544,127	501,285	371,547	219,527	338,375
Ornamental Species—					
Rose bushes.....	595,000	460,879	592,113	2,001,121	1,440,440
Other ornamental shrubs and deciduous trees.....	4,185,953	3,548,277	4,113,190	4,908,373	4,343,288
Evergreen trees.....	1,362,406	1,329,200	1,631,726	1,292,029	1,759,369
Ornamental climbers.....	46,948	43,306	25,081	44,418	213,629
Bulbs and tubers.....	5,061,270	3,783,225	10,315,900	..	..
Herbaceous perennials.....	890,595	785,748	956,483	..	..
Hybrid teas on standards (roses)....	..	..	..	6,167	29,009

40.—Acreage of Nursery Stock, by Province, 1959-61

Province	1959		1960		1961	
	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species
	acres	acres	acres	acres	acres	acres
Quebec.....	256	779	67	168	42	340
Ontario.....	264	2,072	480	2,530	514	3,299
Prairie Provinces.....	76	459	104	529	93	550
British Columbia.....	36	162	70	155	89	161
Totals.....	632	3,472	721	3,382	738	4,350

¹ Includes the Maritime Provinces for which insufficient information was reported.

Greenhouse Operations.—Annual surveys have been made of greenhouse operations for 1955 and subsequent years. Data are reported by firms and individuals returning questionnaires, with the exception of that for cucumbers and tomatoes grown in Essex County of Ontario (the most important producing area), which is based on information obtained from the local co-operative marketing agency. Only greenhouses used for the production of items for sale are included in the survey.

41.—Greenhouse Operations, by Province, 1961, with Totals for 1957-61

Province	Firms Reporting	Area			Value of Sales (Wholesale)			
		Under Glass	Under Cloth	Open Field	Cut Flowers and Potted Plants	Vegetables	Plants—Rooted Cuttings, etc., for Growing on	Total Sales
	No.	sq. ft.	sq. ft.	acres	\$	\$	\$	\$
Newfoundland...	4	33,870	—	0.7	1	1	1	1
Prince Edward Island.....	2	4,400	—	0.5	41,953	1,925	9,864	53,742
Nova Scotia.....	36	476,385	14,750	42.7	406,070	110,447	16,415	622,932
New Brunswick.....	23	170,285	8,600	21.5	285,642	—	13,399	299,041
Quebec.....	127	1,059,842	35,553	192.1	1,571,937	35,013	236,872	1,843,822
Ontario.....	610	12,500,483	334,014	2,175.4	10,047,869	3,631,452	1,442,111	15,121,432
Manitoba.....	28	200,840	7,410	68.8	160,885	1,734	100,095	262,714
Saskatchewan.....	13	218,960	3,000	26.7	154,647	16,920	43,396	214,963
Alberta.....	50	1,694,470	26,800	77.1	1,480,973	144,624	269,282	1,894,879
British Columbia.....	181	2,115,353	5,780	554.5	1,428,178	446,985	209,722	2,034,885
Totals, 1961....	1,074	18,474,888	435,912	3,160.0	15,668,154	4,389,100	2,341,156	22,398,410
1960....	1,045	15,672,066	453,718	2,214.6	14,899,047	4,015,284	2,502,170	21,416,501
1959....	1,191	15,778,177	590,372	1,928.4	16,948,269	3,421,308	2,191,411	22,560,988
1958....	1,125	15,525,691	473,541	2,035.7	13,896,582	3,175,285	2,051,690	19,126,557
1957....	1,269	15,441,256	422,621	1,815.2	13,393,838	3,116,221	1,922,298	18,432,257

¹ Included with Prince Edward Island.

Subsection 8.—Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those before August 1962, certain

points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1962 are final prices for all grains. For the remaining months of 1962, the western grain prices used in the index are initial prices. Subsequent participation payments made on the 1962 crops will be added to the prices currently used and the index revised upward accordingly.

42.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1956-62, and Monthly Indexes for 1961 and 1962

(1935-39=100)

NOTE.—A description of this index, its coverage and the methods used will be found in *DBS Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for October-December 1946.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
Averages—										
1956.....	240.1	208.7	235.1	258.8	230.5	227.0	208.5	224.0	256.9	234.6
1957.....	197.0	212.6	219.4	264.8	235.4	222.4	201.6	223.6	260.2	234.2
1958.....	203.4	216.8	227.0	274.8	266.5	236.6	214.5	236.4	263.2	245.5
1959.....	234.4	227.3	239.5	272.7	261.2	240.6	218.6	239.6	265.5	247.4
1960.....	265.0	238.0	264.7	273.6	261.3	241.2	221.6	239.0	271.4	250.0
1961										
January.....	218.9	225.6	235.1	282.3	270.0	256.7	244.7	260.7	278.0	261.3
February.....	214.5	228.8	232.3	283.8	270.9	256.4	245.1	262.8	275.6	262.1
March.....	201.0	226.2	227.9	278.2	267.7	256.7	244.4	261.3	274.6	259.8
April.....	209.5	225.3	226.1	268.4	261.4	254.4	242.4	259.1	272.5	255.6
May.....	187.9	222.7	222.1	267.1	262.5	252.2	240.7	257.8	270.6	254.5
June.....	221.0	230.7	235.8	274.0	265.0	252.3	240.1	257.9	273.4	256.9
July.....	202.5	226.9	226.6	274.7	266.6	252.2	240.2	257.0	273.5	256.9
August.....	212.4	223.8	228.1	270.3	259.6	269.4	265.8	271.7	270.4	263.9
September.....	186.8	225.6	207.1	272.9	264.0	272.3	265.6	277.0	281.5	266.6
October.....	172.4	221.8	203.0	272.2	264.7	273.1	261.0	275.2	283.2	265.2
November.....	169.3	223.4	200.8	275.1	265.1	271.5	262.4	273.2	281.5	265.3
December.....	176.7	223.4	200.3	273.3	261.7	276.4	263.7	276.8	281.3	266.5
Averages, 1961.....	197.7	225.4	220.4	274.4	265.2	262.0	251.3	265.9	276.3	261.2
1962										
January.....	176.5	226.0	201.9	273.8	265.1	275.6	263.8	276.5	282.4	266.7
February.....	172.0	224.8	201.8	273.8	262.4	276.5	264.0	276.0	280.1	265.7
March.....	176.1	221.9	205.5	271.5	262.2	277.1	263.8	277.1	281.3	265.7
April.....	168.3	224.9	199.0	267.6	263.3	277.1	264.6	279.8	281.9	266.1
May.....	189.4	224.8	201.8	267.3	264.6	278.6	266.3	282.9	282.9	267.9
June.....	195.0	226.4	218.6	272.1	271.9	282.2	268.0	287.2	287.3	272.8
July.....	211.6	236.0	236.3	275.9	278.5	284.9	271.5	290.9	292.6	277.8
August.....	264.0	243.5	259.7	279.4	284.2	251.4	238.6	255.5	294.8	262.5
September.....	197.1	235.7	218.3	272.2	282.0	248.7	223.5	252.7	294.8	257.4
October.....	208.8	234.2	222.5	274.5	283.1	245.5	220.4	245.1	295.7	255.9
November.....	194.0	234.2	207.1	275.7	282.3	242.8	219.4	243.7	293.0	254.5
December.....	201.1	235.6	211.5	277.8	279.3	242.4	218.4	242.8	287.9	253.4
Averages, 1962.....	196.2	230.7	215.3	273.5	273.2	265.2	247.7	267.5	287.9	263.9

Monthly prices of grain and monthly prices of livestock are shown in *DBS Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

43.—Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31 1953-62

(Basis, in store Fort William-Port Arthur)

Year Ended July 31—	Averages in Cents and Eighthths per Bushel				
	Wheat, ¹ , ² No. 1 N.	Oats, ¹ No. 2 C.W.	Barley, ¹ No. 3 C.W. —6 Row	Rye, ¹ No. 2 C.W.	Flaxseed, No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
1953.....	185/6	80/3	136/5	158/2	329
1954.....	186/2	73/2	109/7	99/1	283/6
1955.....	173	90/4	122/4	112/2	309/1
1956.....	174	83/5	114/3	110/1	360/1
1957.....	168/1	80/6	116	119/7	298/4
1958.....	162/3	76/3	111	106	303
1959.....	166/2	77/6	109/7	108	302
1960.....	165/7	82/4	108/1	109/7	334/2
1961.....	167/4	81/2	107/5	105	311/4
1962.....	189/6	96/1	143/7	136/6	368/2

¹ Canadian Wheat Board daily fixed prices. ² International Wheat Agreement and domestic sales except for the crop year 1952-53 which are domestic sales only. ³ Winnipeg Grain Exchange daily closing cash quotation

44.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1959-62

Item	Toronto				Montreal			
	1959	1960	1961	1962	1959	1960	1961	1962
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	25.10	22.65	22.75	25.75	24.67	22.95	22.80	26.4
Steers, medium.....	23.08	20.51	21.07	23.75	22.94	18.74	21.63	23.8
Steers, common.....	19.95	17.21	17.59	19.61	20.11	17.94	18.72	19.7
Heifers, good.....	23.31	20.45	21.49	23.11	21.42	19.73	21.02	20.9
Heifers, medium.....	21.35	18.46	19.83	21.31	19.94	18.63	19.28	19.2
Calves, fed, good.....	25.24	22.69	23.17	24.45	20.64	20.92	21.10	21.3
Cows, good.....	17.55	15.85	16.25	17.85	18.59	16.70	16.55	17.8
Cows, medium.....	16.37	14.80	15.05	16.20	16.90	15.42	15.40	16.3
Bulls, good.....	20.31	17.65	19.12	19.60	20.23	19.16	19.14	19.7
Feeder steers, good.....	25.10	22.90	22.70	24.90	1	1	1	1
Feeder steers, common.....	21.28	19.14	18.47	21.94	1	1	1	1
Calves, veal, good and choice.....	33.10	31.80	30.80	31.85	28.78	27.80	28.05	29.5
Calves, veal, common and medium.....	26.58	24.77	22.93	24.19	22.54	22.50	22.29	23.6
Hogs, Grade B, dressed.....	23.80	23.75	27.30	28.60	23.90	24.55	27.65	28.1
Lambs, good.....	21.15	21.85	20.80	22.00	20.13	20.10	20.25	20.2
Lambs, common.....	18.65	17.01	16.35	18.21	16.52	15.94	17.74	17.5
Sheep, good.....	9.11	9.12	9.02	9.44	9.11	8.95	9.66	8.8
	Winnipeg				Edmonton			
	1959	1960	1961	1962	1959	1960	1961	1962
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	23.85	21.70	21.40	24.85	22.67	20.46	20.70	23.1
Steers, medium.....	22.20	19.85	20.24	22.88	20.94	18.85	19.62	22.2
Steers, common.....	19.25	16.66	18.11	18.58	18.48	16.73	17.43	19.1
Heifers, good.....	22.26	20.22	19.85	22.75	20.66	18.56	18.80	21.1
Heifers, medium.....	19.38	18.16	18.26	20.77	18.97	17.10	17.69	19.1
Hogs, Grade B, dressed.....	23.49	20.57	20.04	23.28	21.75	18.96	19.23	21.1
Cows, good.....	17.05	15.50	15.50	17.20	15.49	14.40	14.65	15.1
Cows, medium.....	15.83	14.32	14.52	15.88	14.54	13.21	13.49	14.1
Bulls, good.....	18.37	16.69	17.46	18.12	16.99	15.10	16.44	17.1
Feeder steers, good.....	22.90	21.00	21.45	24.40	22.62	20.16	20.75	23.1
Feeder steers, common.....	19.21	18.07	19.05	21.62	18.79	17.37	17.85	20.1
Stock cows and heifers, good.....	20.18	17.55	17.78	20.17	18.21	15.45	15.94	18.1
Stock cows and heifers, common.....	17.35	15.24	14.67	16.25	14.97	13.30	13.53	14.1
Calves, veal, good and choice.....	31.75	30.45	30.35	33.35	24.65	23.94	25.35	27.1
Calves, veal, common and medium.....	25.63	24.05	24.23	26.69	20.15	19.84	20.53	22.1
Hogs, Grade B, dressed.....	21.30	21.65	24.85	25.65	20.46	20.63	23.80	25.1
Lambs, good.....	17.80	17.70	17.00	17.95	17.54	17.33	16.55	17.1
Lambs, common.....	16.08	15.77	15.03	15.44	15.51	15.51	15.28	15.1
Sheep, good.....	4.63	4.63	3.78	4.49	8.69	8.96	9.44	7.1

¹ No sales reported.

Subsection 9.—Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the hands of the consumer. It should also be pointed out that there are minor inaccuracies in certain of the figures since statistics of storage stocks in the hands of retailers and consumers are not available.

All basic foods are classified under 13 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (dry weight) in the dairy products group; fat content for fats and oils; and fresh equivalent or fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 45 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1956-60 as an average for comparison with the years 1960 and 1961.

45.—Per Capita Supplies of Food Moving into Consumption 1960 and 1961, with Average for 1956-60

Kind of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1956-60 Average	
	Average 1956-60	1960 ^a	1961	1960	1961
Cereals..... Retail wt.	157.2	153.7	151.9	97.8	96.6
Flour (including rye flour) ¹	139.6	135.2	134.1	96.8	96.1
Oatmeal and rolled oats.....	5.0	4.8	5.0	96.0	100.0
Pot and pearl barley.....	0.2	0.2	0.2	100.0	100.0
Corn meal and flour.....	1.2	1.7	1.8	141.7	150.0
Buckwheat flour.....	0.1	0.1	0.1	100.0	100.0
Rice.....	4.5	4.5	3.5	100.0	77.8
Breakfast food.....	6.7	7.2	7.2	107.5	107.5
Potatoes..... Retail wt.	143.6	144.1	145.0	100.3	101.0
Potatoes, white.....	143.0	143.6	144.6	100.0	101.1
Potatoes, sweet.....	0.5	0.5	0.4	100.0	80.0
Sugars and Syrups..... Sugar content	104.9	104.3	104.7	99.4	99.8
Sugar.....	97.1	96.6	97.7	99.5	100.6
Maple sugar.....	0.7	0.8	1.2	114.3	171.4
Other.....	11.1	10.7	8.8	96.4	79.3
Arch..... Retail wt.	1.6	1.6	1.6	100.0	100.0
ulses and Nuts..... Retail wt.	10.4	10.0	10.2	96.2	98.0
Dry beans ²	3.3	2.9	2.8	84.8	84.8
Dry peas.....	1.5	1.4	1.3	93.3	86.7
Peanuts.....	3.0	3.0	3.2	100.0	106.7
Tree nuts.....	1.2	1.2	1.2	100.0	100.0
Cocoa.....	2.9	3.1	3.3	106.9	113.8
uit..... Fresh equiv.	241.1	240.2	235.1	99.6	97.5
Tomatoes and Citrus Fruit—					
Tomatoes, fresh.....	17.3	17.6	18.0	101.7	104.0
Tomato products ³	18.6	19.9	20.7	107.0	111.3
Citrus fruit, fresh.....	33.3	31.7	30.3	95.2	91.0
Citrus fruit juice.....	15.5	16.3	16.0	105.2	103.2
Other Fruit—					
Fresh.....	67.3	64.7	66.6	96.1	99.0
Canned.....	15.7	16.0	16.7	101.9	106.4
Dried.....	5.7	5.4	4.4	94.7	77.2
Juice.....	5.4	6.1	4.4	113.0	81.5
Frozen.....	2.0	2.3	2.4	115.0	120.0

^aFor footnotes, see end of table, p. 474.

**45.—Per Capita Supplies of Food Moving Into Consumption 1960 and 1961, with
Average for 1956-60—concluded**

Kind of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1956-60 Average	
	Average 1956-60	1960*	1961	1960	1961
Vegetables.....Fresh equiv.	105.8	110.6	109.0	101.5	103.0
Fresh—					
Cabbage and greens.....Retail wt.	19.7	19.4	18.9	98.5	95.9
Carrots....."	14.2	16.9	14.8	119.0	104.2
Legumes....."	2.5	1.9	2.3	76.0	92.0
Other....."	38.4	41.4	41.9	107.8	109.1
Canned.....Net wt. canned	18.5	17.2	17.2	93.0	93.0
Frozen.....Retail wt.	2.4	3.9	3.6	162.5	150.0
Oils and Fats.....Fat content	43.5	44.9	44.1	103.2	101.4
Margarine.....Retail wt.	8.4	9.4	10.1	111.9	120.2
Lard....."	7.9	7.2	7.2	91.1	91.1
Shortening....."	9.4	9.4	9.1	100.0	96.8
Salad and cooking oil....."	3.3	4.1	4.2	124.2	127.3
Butter....."	19.0	17.0	16.4	89.5	86.3
Eggs.....Fresh equiv.	36.9	36.7	35.6	99.5	96.5
Meat.....Carcass wt.	142.5	146.6	143.1	102.9	100.4
Pork....."	52.2	55.3	53.5	105.9	102.5
Beef....."	69.0	69.2	68.8	100.3	100.0
Veal....."	8.3	7.6	8.2	91.6	98.8
Mutton and lamb....."	2.8	3.2	3.7	114.3	132.1
Offal.....Edible wt.	5.1	4.0	4.6	74.8	90.2
Canned meat.....Net wt. canned	5.6	7.5	5.4	133.9	96.4
Poultry and Fish.....Edible wt.	33.3	33.3	35.7	100.0	107.2
Hens and chickens ¹.....Eviscerated wt.	21.4	20.9	23.2	97.7	108.4
Other poultry....."	7.2	6.9	8.2	95.8	113.9
Fish and shellfish, fresh and frozen.....Edible wt.	7.4	7.7	7.6	104.1	102.7
Fish, cured (smoked, salted, pickled)....."	1.8	1.8	1.7	100.0	94.4
Fish and shellfish, canned.....Net wt. canned	4.1	3.1	3.1	75.6	75.6
Milk and Cheese.....Milk solids	65.4	66.4	67.1	101.5	102.6
Cheddar cheese ².....Retail wt.	5.6	5.9	5.9	105.4	105.4
Other cheese....."	1.2	1.3	1.4	108.3	116.7
Cottage cheese....."	1.2	1.3	1.3	108.3	108.3
Evaporated whole milk....."	17.9	17.7	16.5	98.9	92.2
Condensed whole milk....."	0.8	0.8	0.8	100.0	100.0
Whole milk powder....."	0.3	0.3	0.2	100.0	66.7
Condensed skim milk....."	0.2	0.1	0.1	50.0	50.0
Skim milk powder....."	6.2	6.9	8.4	111.3	135.5
Evaporated skim milk....."	0.5	0.2	0.3	40.0	60.0
Milk in ice cream....."	37.1	39.1	39.9	105.4	107.5
Powdered buttermilk....."	0.5	0.4	0.5	80.0	100.0
Fluid whole milk ³"	395.6	393.2	385.3	99.4	97.4
Beverages.....Primary distribution wt.	9.6	9.6	9.6	100.0	100.0
Tea....."	2.6	2.4	2.4	92.3	92.3
Coffee.....Green beans	8.7	9.0	9.0	103.4	103.4

¹ Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inventories in all positions. ² Includes soybean flour. ³ Tomatoes canned, tomato juice, tomato pulp,

paste and purée. ⁴ Exclusive of Newfoundland.

⁵ Includes process cheese.

⁶ Includes cream,

expressed as milk.

Disappearance of Meats and Lard.—Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 46. All estimates are on a carcass-weight basis except canned meats which are in terms of product.

46.—Supply, Distribution and Disappearance of Meats and Lard, 1956-62

Item		1956*	1957*	1958*	1959*	1960*	1961	1962
Beef—								
Animals slaughtered in Canada.....	'000	2,420.7	2,514.3	2,437.6	2,261.3	2,471.3	2,510.9	2,503.6
Estimated dressed weight.....	'000 lb.	1,172,603	1,244,584	1,220,239	1,153,037	1,266,280	1,302,641	1,306,878
On hand, Jan. 1.....	"	29,682	33,251	29,689	31,417	27,958	29,208	33,350
Imports for consumption.....	"	18,266	21,974	26,458	36,182	31,054	30,990	37,555
Total Supply.....	"	1,220,551	1,299,809	1,276,386	1,220,636	1,325,292	1,362,839	1,377,783
Exports.....	"	18,634	55,312	63,925	29,959	25,942	37,536	27,656
Used for canning.....	"	20,713	18,177	19,374	16,651	20,103	20,657	19,086
On hand, Dec. 31.....	"	33,251	29,689	31,417	27,958	29,208	33,350	33,436
DOMESTIC DISAPPEARANCE.....	'000 lb.	1,147,955	1,196,631	1,161,670	1,146,068	1,250,039	1,271,296	1,297,605
PER CAPITA DISAPPEARANCE.....	lb.	71.4	72.0	68.0	65.6	70.0	69.7	69.9
Veal—								
Animals slaughtered in Canada.....	'000	1,332.7	1,358.3	1,191.1	1,093.5	1,081.7	1,048.8	990.1
Estimated dressed weight.....	'000 lb.	139,805	148,058	125,544	120,505	125,155	123,754	121,486
On hand, Jan. 1.....	"	4,662	5,701	5,214	4,608	3,925	4,970	3,652
Imports for consumption.....	"	1	1	1	1	1	1	1
Total Supply.....	"	144,467	153,759	130,758	125,113	129,080	128,724	125,138
Exports.....	"	1	1	1	1	1	1	1
Used for canning.....	"	1,433	957	1,240	977	959	1,321	1,198
On hand, Dec. 31.....	"	5,701	5,214	4,608	3,925	4,970	3,652	3,794
DOMESTIC DISAPPEARANCE.....	'000 lb.	137,283	147,588	124,910	120,211	123,151	123,751	120,146
PER CAPITA DISAPPEARANCE.....	lb.	8.5	8.9	7.3	6.9	6.9	6.8	6.5
Mutton and Lamb—								
Animals slaughtered in Canada.....	'000	770.9	762.8	716.2	925.7	737.4	816.7	764.6
Estimated dressed weight.....	'000 lb.	32,688	33,180	31,297	31,784	31,561	35,116	32,648
On hand, Jan. 1.....	"	4,816	4,865	4,693	9,490	6,080	7,816	9,932
Imports for consumption.....	"	9,546	11,015	21,547	20,071	23,532	33,433	37,587
Total Supply.....	"	47,050	49,060	57,537	61,345	61,173	76,365	80,167
Exports.....	"	45	472	1,377	749	109	173	566
Used for canning.....	"	628	558	1,022	3,087	810	1,185	1,232
On hand, Dec. 31.....	"	4,865	4,693	9,490	6,080	7,816	9,932	7,034
DOMESTIC DISAPPEARANCE.....	'000 lb.	41,512	43,337	45,648	51,429	52,438	65,075	71,335
PER CAPITA DISAPPEARANCE.....	lb.	2.6	2.6	2.7	2.9	2.9	3.6	3.8
Pork—								
Animals slaughtered in Canada.....	'000	6,858.2	6,295.4	7,466.2	9,661.8	7,804.4	7,522.1	7,648.2
Estimated dressed weight ²	'000 lb.	881,964	818,403	973,599	1,237,682	988,035	966,595	978,211
On hand, Jan. 1.....	"	34,965	20,571	23,821	45,310	56,549	21,139	24,648
Imports for consumption.....	"	154	1,512	1,744	1,416	17,706	41,859	35,602
Total Supply.....	"	917,083	840,486	999,164	1,284,408	1,062,290	1,029,593	1,038,461
Exports.....	"	55,408	38,183	63,493	70,042	67,691	52,394	47,922
Used for canning.....	"	50,574	40,313	47,316	167,145	33,602	42,255	46,514
On hand, Dec. 31.....	"	20,571	23,821	45,310	56,549	21,139	24,648	18,273
DOMESTIC DISAPPEARANCE.....	'000 lb.	790,530	738,169	843,045	990,672	939,858	910,296	925,752
PER CAPITA DISAPPEARANCE.....	lb.	49.2	44.4	49.4	56.7	52.6	49.9	49.9
Canned Meats—								
Estimated production.....	'000 lb.	81,699	69,540	75,909	175,738	66,681	84,928	88,643
On hand, Jan. 1.....	"	20,775	18,764	18,844	13,833	127,274	48,473	42,775
Imports for consumption.....	"	13,662	21,274	21,212	19,585	12,487	18,105	12,405
Total Supply.....	"	116,136	109,578	115,965	209,156	206,442	151,506	143,823

For footnotes, see end of table, p. 476.

46.—Supply, Distribution and Disappearance of Meats and Lard, 1956-62—concluded

Item	1956*	1957*	1958*	1959*	1960*	1961	1962
Canned Meats—concluded							
Exports..... '000 lb.	11,442	5,241	6,314	6,843	24,357	9,623	16,437
On hand, Dec. 31..... "	13,764	18,844	13,833	127,274	48,473	42,775	29,476
DOMESTIC DISAPPEARANCE..... '000 lb.	85,930	85,493	95,818	75,039	133,612	99,108	97,860
PER CAPITA DISAPPEARANCE..... lb.	5.3	5.1	5.6	4.3	7.5	5.4	5.3
Offal—							
Estimated production..... '000 lb.	91,204	90,498	93,864	100,788	95,849	95,390	95,501
On hand, Jan. 1..... "	6,042	5,146	5,867	4,946	5,251	5,042	5,906
Imports for consumption..... "	2,360	3,150	758	2,311	5,063	3,426	3,997
Total Supply..... "	98,606	98,794	100,489	108,045	106,163	103,858	105,404
Exports..... "	6,831	5,587	11,590	15,397	14,434	14,146	20,410
Used for canning..... "	2,285	1,598	2,039	1,628	1,673	2,059	1,818
On hand, Dec. 31..... "	5,146	5,867	4,946	5,251	5,042	5,906	5,067
DOMESTIC DISAPPEARANCE..... '000 lb.	84,344	85,742	81,914	85,769	85,014	81,747	78,109
PER CAPITA DISAPPEARANCE..... lb.	5.2	5.2	4.8	4.9	4.8	4.5	4.2
Lard—¹							
Estimated production..... '000 lb.	125,881	111,992	140,599	181,680	142,193	130,191	123,515
On hand, Jan. 1..... "	5,707	4,866	6,823	8,608	7,663	5,949	6,921
Imports for consumption..... "	15,301	28,015	5,224	2,736	20,903	25,145	24,784
Total Supply..... "	146,889	144,873	152,646	193,024	170,759	161,285	155,220
Exports..... "	320	8	475	9,217	1,667	912	32
On hand, Dec. 31..... "	4,866	6,823	8,608	7,663	5,949	6,921	6,197
DOMESTIC DISAPPEARANCE..... '000 lb.	141,703	138,042	143,563	176,144	163,143	153,452	148,991
PER CAPITA DISAPPEARANCE..... lb.	8.8	8.3	8.4	10.1	9.1	8.4	8.0

¹ Quantity small; included with beef. ² Trimmed of larding fat and excluding offal. ³ Includes commercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected slaughter.

Section 5.—Agricultural Statistics of the Census

This Section presents a limited amount of information from the 1961 Census of Agriculture. Details are contained in Vol. V of the 1961 *Census of Canada* and in a number of special and advance census reports. A list of these publications and their prices is available from the DBS on request.

Number of Farms.—There were 16 p.c. fewer farms in Canada in 1961 than in 1956, the year of the immediately preceding census. The number dropped from 575,015 in the earlier year to 480,903 in the later. However, part of this decrease was attributable to a change in the census definition of a farm. In the 1956 (and 1951) Census, a farm was defined as a holding on which agricultural operations were carried out and which was (a) three acres or more in size, or (b) from one to three acres in size and with agricultural production during the previous year valued at \$250 or more. In the 1961 Census, a farm was defined as a holding of one acre or more with the sales of agricultural products during the previous year valued at \$50 or more. On the basis of the 1956 definition, the decrease in the number of farms was from 575,015 to 521,634 in 1961, or about 9 p.c.

47.—Number of Farms, by Province, Censuses of 1956 and 1961

Province or Territory	1956 (1956 Definition) ¹	1961 (1961 Definition) ¹	P.C. Change 1956-61	1961 (1956 Definition) ¹	P.C. Change 1956-61
	No.	No.		No.	
Newfoundland.....	2,387	1,752	-26.6	3,358	+40.7
Prince Edward Island.....	9,432	7,335	-22.2	8,025	-14.9
Nova Scotia.....	21,075	12,518	-40.6	18,264	-13.3
New Brunswick.....	22,116	11,786	-46.7	18,331	-17.1
Quebec.....	122,617	95,777	-21.9	108,865	-11.2
Ontario.....	140,602	121,333	-13.7	127,492	- 9.3
Manitoba.....	49,201	43,306	-12.0	44,264	-10.0
Saskatchewan.....	103,391	93,924	- 9.2	94,402	- 8.7
Alberta.....	79,424	73,212	- 7.8	74,661	- 6.0
British Columbia.....	24,748	19,934	-19.5	23,946	- 3.2
Yukon and Northwest Territories.....	22	26	+18.2	26	+18.2
Canada.....	575,015	480,903	-16.4	521,634	- 9.3

¹ See text immediately preceding table.

Farm Areas.—The total area of farms as defined in the 1961 Census was 172,551,051 acres, only slightly less than the 173,923,691 acres recorded in 1956. Improved farm and for the country as a whole was up 3 p.c. from 100,326,243 acres to 103,403,426 acres and unimproved farm land, which includes woodland and rough pasture, was down about 6 p.c. from 73,597,448 acres to 69,147,625 acres. Decreases in total farm area in the six eastern provinces and in British Columbia offset by almost 1,400,000 acres the increases in total farm area in the Prairie Provinces and the Territories. As Table 48 shows, only Manitoba, Alberta and British Columbia reported more farm land under crops in 1961 and in 1956 but the total increase in these provinces was somewhat less than the total decrease in the other provinces. On the other hand, the total increase in improved pasture in the four western provinces was somewhat greater than the total decrease in the eastern provinces and there was a substantial increase in the acreage under summer fallow for Canada as a whole.

48.—Use of Farm Land, by Province, Censuses of 1956 and 1961

Item	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
Improved Land.....	21,234	20,455	645,492	579,558	629,874	497,521	951,291	734,107
Under crops ¹	15,968	12,919	419,099	391,112	416,235	329,114	617,279	482,548
Pasture (improved)....	5,739	4,097	201,225	167,913	161,424	127,468	252,686	200,047
Summer fallow.....	92	145	2,463	2,532	2,649	2,654	13,560	5,648
Other.....	2,435	3,294	22,705	18,001	49,566	38,285	67,766	45,864
Unimproved Land.....	47,580	34,106	419,971	380,599	2,145,768	1,732,874	2,030,158	1,465,568
Woodland.....	26,919	19,802	334,226	296,759	1,566,071	1,362,869	1,703,702	1,230,861
Other.....	20,661	14,304	85,745	83,840	579,697	370,005	326,456	234,707
Totals, Farm Area..	71,814	54,561	1,065,463	960,157	2,775,642	2,230,395	2,981,449	2,199,675

¹ Includes field, vegetable, fruit and nursery crop land.

48.—Use of Farm Land, by Province, Censuses of 1956 and 1961—concluded

Item	Quebec		Ontario		Manitoba		Saskatchewan	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
Improved Land	8,629,835	7,861,176	12,572,157	12,032,924	11,453,783	11,963,994	40,506,000	43,117,813
Under crops ¹	5,549,524	5,213,302	8,219,407	7,990,358	7,686,013	7,688,728	24,480,501	23,923,192
Pasture (improved)....	2,642,764	2,312,950	3,470,688	3,295,609	594,902	719,819	1,128,001	1,394,280
Summer fallow.....	67,082	46,344	333,973	244,842	2,827,551	3,230,095	14,193,468	17,179,572
Other.....	370,465	291,580	548,089	502,115	345,317	325,352	704,030	620,769
Unimproved Land	7,230,293	6,334,316	7,307,489	6,545,583	6,478,034	6,205,957	22,287,979	21,297,705
Woodland.....	4,877,803	4,501,305	3,338,870	3,257,589	1,566,494	1,490,673	2,379,043	2,194,920
Other.....	2,402,490	1,833,011	3,968,619	3,287,994	4,911,540	4,715,284	19,908,936	19,102,785
Totals, Farm Area..	15,910,128	14,198,492	19,879,646	18,578,507	17,931,817	18,169,951	62,793,979	64,415,518
	Alberta		British Columbia		Yukon and N.W.T.		Canada	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
Improved Land	23,746,113	25,288,527	1,166,752	1,303,263	712	1,088	100,326,213	103,403,426
Under crops ¹	14,850,171	15,614,839	689,749	788,896	230	526	62,944,176	62,435,534
Pasture (improved)....	1,279,894	1,670,391	320,251	354,830	245	492	10,057,819	10,247,894
Summer fallow.....	7,091,264	7,449,758	87,479	81,785	44	11	24,619,625	28,243,386
Other.....	524,784	553,539	69,273	77,752	193	59	2,704,623	2,476,610
Unimproved Land	22,224,282	21,940,126	3,372,129	3,203,289	3,765	7,502	73,597,448	69,147,625
Woodland.....	2,891,125	2,138,137	855,398	752,990	887	1,484	19,540,541	17,247,389
Other.....	19,333,154	19,801,989	2,516,731	2,450,299	2,878	6,018	54,056,907	51,900,236
Totals, Farm Area..	45,970,395	47,228,653	4,538,881	4,506,552	4,477	8,596	173,923,691	172,551,051

¹ Includes field, vegetable, fruit and nursery crop land.

Economic Classification of Farms.—Value of sales was the main criterion used for the economic classification of farms. Commercial farms were defined as farms reporting sales of agricultural products valued at \$1,200 or more for a 12-month period (excluding institutional-type farms); these were subdivided into seven classes based on the value of agricultural products sold.

Small-scale farms were divided into two groups: *part-time farms* included those with sales of agricultural products of \$250 to \$1,199 and for which the operator reported (a) 100 days or more of off-farm work (excluding exchange work) or (b) income received by the operator and his family from all other sources (excluding income from investments) greater than the income received from the sale of agricultural products; *other small-scale farms* were farms with reported agricultural sales of \$250 to \$1,199 and the farm operator (a) worked off the farm less than 100 days and (b) reported the value of agricultural sale greater than the income received from other sources. *Residential and other small farms* included those with value of agricultural products sold of less than \$250, and *institutional farms, etc.* included experimental farms, community pastures, Indian reserve farms and institutional-type farms, regardless of the amount of sales of agricultural products.

49.—Economic Classification of Farms, by Province, Censuses of 1951 and 1961

Economic Class	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Commercial Farms.....	401	456	5,254	4,530	6,570	4,939	7,704	5,116
With Value of Products Sold of:								
\$ 1,200 — \$ 2,499.....	204	175	2,898	1,644	3,760	1,923	4,422	2,043
2,500 — 3,749.....	50	81	1,309	975	1,253	922	1,598	951
3,750 — 4,999.....	29	31	535	701	631	525	704	545
5,000 — 9,999.....	67	76	440	895	690	936	777	985
10,000 — 14,999.....	20	29	53	184	112	282	121	276
15,000 — 24,999.....	31	27	19	79	124	191	82	188
25,000 or over.....	31	37	19	52	124	160	82	133
Other Farms.....	3,225	1,296	4,883	2,805	16,945	7,579	18,727	6,670
Small-scale—								
Part-time.....	576	335	1,321	793	5,382	2,466	6,032	2,150
Other.....	379	289	2,185	1,160	3,807	2,085	3,927	1,939
Residential and other small farms.....	2,264	664	1,372	844	7,757	2,995	8,754	2,553
Institutional farms, etc.....	6	8	5	8	19	33	14	28
Totals, All Farms.....	3,626	1,752	10,137	7,335	23,515	12,518	26,431	11,786
	Quebec		Ontario		Manitoba		Saskatchewan	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Commercial Farms.....	70,588	62,497	105,819	90,345	37,326	33,522	82,748	82,285
With Value of Products Sold of:								
\$ 1,200 — \$ 2,499.....	35,407	23,570	32,742	20,678	12,824	9,236	33,236	18,739
2,500 — 3,749.....	17,606	14,553	24,747	15,134	9,042	6,798	20,720	17,068
3,750 — 4,999.....	8,392	8,652	16,382	11,442	5,822	5,297	11,466	13,227
5,000 — 9,999.....	7,917	11,851	23,574	23,901	7,885	8,966	14,229	24,290
10,000 — 14,999.....	883	2,369	4,651	8,598	1,200	1,971	2,156	5,981
15,000 — 24,999.....	383	952	3,723	5,781	553	868	941	2,299
25,000 or over.....	383	550	3,723	4,811	553	386	941	681
Other Farms.....	63,748	33,280	44,101	30,988	15,057	9,784	29,270	11,639
Small-scale—								
Part-time.....	21,189	10,249	13,364	9,920	3,271	2,402	4,376	2,515
Other.....	18,170	11,889	13,428	9,371	7,464	4,563	18,772	6,276
Residential and other small farms.....	24,187	10,947	17,172	11,604	4,285	2,779	5,976	2,634
Institutional farms, etc.....	202	195	137	93	37	40	146	214
Totals, All Farms.....	134,336	95,777	149,920	121,333	52,383	43,306	112,018	93,924
	Alberta		British Columbia		Yukon and N.W.T.		Canada	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Commercial Farms.....	58,002	58,698	11,966	10,902	2	3	386,380	353,293
With Value of Products Sold of:								
\$ 1,200 — \$ 2,499.....	21,177	13,495	4,618	2,752	2	1	151,290	94,256
2,500 — 3,749.....	12,841	10,810	2,600	1,730	—	1	91,666	69,023
3,750 — 4,999.....	7,762	8,207	1,439	1,131	—	1	53,162	49,754
5,000 — 9,999.....	11,148	15,976	2,292	2,543	—	—	69,019	90,419
10,000 — 14,999.....	2,828	5,076	570	1,187	—	—	12,594	25,923
15,000 — 24,999.....	2,246	3,155	547	871	—	—	8,649	14,411
25,000 or over.....	2,246	1,979	547	718	—	—	8,649	9,507
Other Farms.....	26,313	14,514	14,440	9,032	2	23	236,711	127,610
Small-scale—								
Part-time.....	5,118	3,807	4,526	3,002	—	6	65,135	37,645
Other.....	12,964	5,933	2,730	1,791	1	5	83,827	45,301
Residential and other small farms.....	8,141	4,612	7,148	4,211	1	7	87,057	43,850
Institutional farms, etc.....	90	162	36	28	—	5	692	814
Totals, All Farms.....	84,315	73,212	26,406	19,934	4	26	623,091	480,903

Type of Commercial Farms.—Commercial farms in the 1961 Census (farms reporting \$1,200 or more sales of agricultural products) are classified by product type in Table 50. A criterion of 51 p.c. or more of total sales was used for this classification; for example, a farm was typed as a poultry farm if 51 p.c. or more of the total agricultural sale for the farm was obtained from the sale of poultry products, and a farm was classed as dairy farm if 40 p.c. to 50 p.c. of total sales was obtained from dairy products, provided the sale of dairy products together with the sale of cattle and calves amounted to 51 p.c. or more of total sales.

50.—Commercial Farms classified by Type of Farm, by Province, Census 1961

Type of Farm	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Dairy.....	80	554	2,017	1,740	39,657	26,246
Cattle, hogs, sheep (excl. dairy farms).....	55	1,039	969	799	7,034	37,154
Poultry.....	74	55	431	282	2,236	3,727
Wheat.....	—	—	—	—	—	344
Small grains (excl. wheat farms).....	—	8	1	16	185	4,436
Field crops, other than small grains.....	134	1,090	81	963	1,629	4,642
Fruits and vegetables.....	23	48	310	132	1,659	5,027
Forestry.....	12	14	384	255	943	478
Miscellaneous specialty.....	26	12	102	48	586	1,361
Mixed.....	52	1,710	644	881	8,568	6,930
Livestock combination.....	12	1,434	431	624	6,608	5,133
Field crops combination.....	1	65	8	51	294	582
Other combinations.....	39	211	205	206	1,766	1,215
Totals, Commercial Farms.....	456	4,530	4,939	5,116	62,497	90,345
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Dairy.....	2,348	1,032	2,646	2,898	1	79,219
Cattle, hogs, sheep (excl. dairy farms).....	5,933	7,582	23,844	2,121	2	86,532
Poultry.....	802	330	646	1,378	—	9,961
Wheat.....	9,199	55,660	12,021	171	—	77,395
Small grains (excl. wheat farms).....	8,413	10,060	9,078	293	—	32,490
Field crops, other than small grains.....	388	74	934	453	—	10,388
Fruits and vegetables.....	100	14	42	2,451	—	9,806
Forestry.....	13	8	35	168	—	2,310
Miscellaneous specialty.....	267	111	339	606	—	3,453
Mixed.....	6,059	7,414	9,113	363	—	41,734
Livestock combination.....	4,112	4,809	5,895	156	—	28,614
Field crops combination.....	1,167	1,693	2,038	104	—	5,998
Other combinations.....	780	1,407	1,180	103	—	7,121
Totals, Commercial Farms.....	33,522	82,285	58,698	10,902	3	353,296

Size of Farms.—Farms are classified by size and by province in Table 51. More than 56 p.c. of the farms of Canada contain less than 240 acres. Size, of course, varies greatly among the provinces; in Newfoundland almost 90 p.c. of the farms are under 70 acres; in the Maritime Provinces 80 p.c. are under 240 acres; in Quebec and Ontario 67 p.c. are between 70 and 240 acres; in the Prairie Provinces 43 p.c. contain from 70 to 399 acres and 54 p.c. 400 or more acres; and in British Columbia 88 p.c. are between 3 and 400 acres in size.

51.—Farms classified by Size and by Province, Census 1961

Size of Farm	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Under 3 acres.....	225	51	190	114	498	1,738
3 — 9 acres.....	640	91	462	188	1,120	4,434
10 — 69 ".....	677	1,414	2,440	1,556	12,722	19,181
70 — 239 ".....	184	5,106	6,567	7,088	68,825	76,112
240 — 399 ".....	19	558	1,781	1,852	9,993	14,248
400 — 559 ".....	4	88	634	625	1,940	3,699
560 — 759 ".....	1	17	260	214	477	1,209
760 — 1,119 ".....	1	9	112	99	135	500
1,120 — 1,599 ".....	—	2	48	32	44	152
1,600 acres or over.....	1	1	24	18	23	60
Totals, Census Farms.....	1,752	7,335	12,518	11,786	95,777	121,333
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Under 3 acres.....	209	128	238	1,229	—	4,620
3 — 9 acres.....	553	262	683	3,678	3	12,114
10 — 69 ".....	1,909	829	1,813	7,903	5	50,449
70 — 239 ".....	10,460	10,860	15,408	3,541	8	204,159
240 — 399 ".....	12,562	20,977	19,385	1,249	2	82,626
400 — 559 ".....	7,628	17,665	11,763	720	—	44,764
560 — 759 ".....	5,065	15,676	8,421	518	2	31,860
760 — 1,119 ".....	3,284	15,499	7,498	499	6	27,642
1,120 — 1,599 ".....	1,133	7,445	3,969	266	—	13,091
1,600 acres or over.....	503	4,583	4,034	331	—	9,578
Totals, Census Farms.....	43,306	93,921	73,212	19,934	26	480,903

Tenure and Age of Farm Operators.—The proportion of farm operators owning all or part of their land increased from 93 p.c. in 1951 to 94 p.c. in 1961, the highest proportion since the turn of the century. As a consequence, the percentage of farms operated entirely on a rented basis continued to decrease.

There was also a decrease in the proportion of farm operators in the younger age groups. Those under 35 years of age decreased from 22 p.c. in 1951 to 17 p.c. in 1961 and, conversely, the proportion of operators of from 45 to 54 years of age increased from 23 p.c. to 27 p.c. and the proportion of those 55 years of age or older increased from 30 p.c. to 52 p.c. in the same comparison.

52.—Tenure and Age of Farm Operators, Censuses of 1951 and 1961

Tenure and Age	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Tenure of Operator—								
Owner (incl. manager).....	3,283	1,574	9,510	6,326	22,209	11,309	25,189	10,538
Tenant.....	60	29	82	64	291	85	316	115
Part owner, part tenant.....	283	149	545	945	1,015	1,124	926	1,133
Age of Operator—¹								
Under 25 years.....	79	30	225	172	372	132	532	132
25 — 34 years.....	450	145	1,457	887	2,705	951	3,873	1,046
35 — 44 ".....	871	417	2,442	1,479	5,320	2,455	6,497	2,588
45 — 54 ".....	831	528	2,317	1,936	5,239	3,389	5,978	3,274
55 — 59 ".....	371	211	1,092	811	2,554	1,591	2,791	1,454
60 — 64 ".....	672	165	1,664	761	4,516	1,387	4,466	1,204
65 — 69 ".....	672	115	607	702	2,771	1,081	2,231	901
70 years or over.....	350	141	927	702	2,771	1,532	2,231	1,187
Totals, Census Farms.....	3,626	1,752	10,137	7,335	23,515	12,518	26,431	11,786
	Quebec		Ontario		Manitoba		Saskatchewan	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Tenure of Operator—								
Owner (incl. manager).....	127,979	88,018	125,159	97,829	37,541	28,266	61,763	48,716
Tenant.....	2,566	1,253	8,852	5,610	5,062	3,459	16,495	9,521
Part owner, part tenant.....	3,791	6,506	15,909	17,894	9,780	11,581	33,760	35,687
Age of Operator—¹								
Under 25 years.....	4,728	2,508	3,749	2,349	1,860	1,167	6,189	3,342
25 — 34 years.....	26,496	14,617	22,136	15,564	10,972	6,130	24,745	14,705
35 — 44 ".....	36,860	25,187	35,699	28,074	14,067	11,132	28,311	24,315
45 — 54 ".....	31,969	26,555	38,365	31,859	11,796	11,861	22,252	24,251
55 — 59 ".....	12,791	10,483	16,658	14,796	4,966	4,775	10,101	9,694
60 — 64 ".....	16,260	7,960	22,985	12,184	6,831	3,727	15,993	7,089
65 — 69 ".....	4,969	4,672	8,239	8,268	2,390	2,390	5,328	5,200
70 years or over.....	4,969	3,795	9,981	8,268	1,642	2,124	3,995	5,200
Total, Census Farms.....	134,336	95,777	149,920	121,333	52,383	43,306	112,018	93,921
	Alberta		British Columbia		Yukon and N.W.T.		Canada	
	1951	1961	1951	1961	1951	1961	1951	1961
	No.	No.	No.	No.	No.	No.	No.	No.
Tenure of Operator—								
Owner (incl. manager).....	53,482	43,765	22,763	16,469	4	14	488,882	352,824
Tenant.....	9,735	6,723	1,524	832	—	5	44,983	27,694
Part owner, part tenant.....	21,098	22,724	2,119	2,633	—	7	89,226	100,385
Age of Operator—¹								
Under 25 years.....	3,630	2,313	395	209	—	—	21,759	12,356
25 — 34 years.....	17,003	11,882	3,315	2,114	—	5	113,152	68,024
35 — 44 ".....	21,050	18,639	6,185	4,645	1	12	157,303	118,944
45 — 54 ".....	19,802	18,739	6,508	5,512	2	1	145,059	127,904
55 — 59 ".....	8,173	8,416	3,016	2,652	—	4	62,513	54,883
60 — 64 ".....	11,638	6,105	5,121	1,884	—	—	90,146	42,460
65 — 69 ".....	3,747	3,747	1,329	1,329	—	2	28,41	28,41
70 years or over.....	2,748	3,371	1,803	1,589	1	2	31,418	27,91
Totals, Census Farms.....	84,315	73,212	26,406	19,934	4	26	623,091	480,906

¹ Operators not reporting age are excluded from 1951 figures.

Farm Machinery and Electrification.—The numbers of most types of machinery on farms increased considerably between 1951 and 1961 as shown in Table 53. However, technological changes were reflected in a reduction in the numbers of such items as threshing machines and grain binders since these types of harvesting equipment are rapidly being replaced by combines.

The proportion of farms reporting electric power increased in all provinces during the same period, although the fact that there were fewer farms resulted in a decrease in the number reporting electric power in certain provinces. The most important increases occurred in Prince Edward Island where the proportion of farms reporting electric power was 22 p.c. in 1951, 40 p.c. in 1956 and 78 p.c. in 1961; in Newfoundland where the increase was from 38 p.c. in 1951 to 44 p.c. in 1956 and 66 p.c. in 1961; in Saskatchewan where the increase was from 16 p.c. in 1951 to 42 p.c. in 1956 and 66 p.c. in 1961; and in Alberta where it was from 25 p.c. to 52 p.c. and 72 p.c. for the same years.

53.—Farm Machinery, by Province, Censuses of 1951 and 1961

Item and Year	Newfound- land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Automobiles.....1951	185	4,147	6,970	7,999	41,602	114,870
.....1961	323	4,713	6,618	6,872	55,385	110,773
Motor trucks.....1951	507	1,679	5,687	4,786	19,167	41,486
.....1961	715	3,253	5,965	4,657	26,597	62,812
Tractors.....1951	126	2,776	4,307	5,221	31,971	105,204
.....1961	462	5,713	7,074	8,102	70,697	150,046
Grain combines.....1951	—	18	16	211	420	10,031
.....1961	2	644	154	770	3,046	22,387
Threshing machines.....1951	5	2,973	826	2,450	30,360	15,946
.....1961	4	1,656	482	915	15,340	16,843
Grain binders.....1951	4	5,956	2,101	4,149	43,467	85,135
.....1961	1	3,222	1,363	1,827	33,647	43,802
	Manitoba	Saskat- chewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Automobiles.....1951	32,060	62,963	46,314	12,557	—	329,667
.....1961	34,619	72,152	52,167	14,322	7	357,951
Motor trucks.....1951	21,163	52,626	39,723	9,291	7	196,122
.....1961	31,806	82,669	71,508	12,004	26	302,012
Tractors.....1951	50,984	106,664	79,282	13,148	3	399,686
.....1961	61,463	126,613	102,624	16,974	21	549,789
Grain combines.....1951	15,268	42,997	20,852	687	—	90,500
.....1961	23,662	65,084	38,530	1,331	1	155,611
Threshing machines.....1951	9,425	19,221	14,768	717	—	96,691
.....1961	5,613	11,623	13,006	572	3	66,057
Grain binders.....1951	31,410	70,584	57,930	2,638	—	303,374
.....1961	12,725	29,998	32,476	1,509	5	160,575

54.—Farm Electrification, by Province, Censuses of 1951, 1956 and 1961

Province or Territory	1951		1956		1961	
	Farms Reporting Electric Power	P.C. of All Farms	Farms Reporting Electric Power	P.C. of All Farms	Farms Reporting Electric Power	P.C. of All Farms
	No.		No.		No.	
Newfoundland.....	1,383	38.1	1,059	44.4	1,152	65.8
Prince Edward Island.....	2,226	22.0	3,748	39.7	5,728	78.1
Nova Scotia.....	16,733	71.2	18,677	88.6	11,953	95.5
New Brunswick.....	15,938	60.3	19,328	87.4	11,371	96.5
Quebec.....	90,209	67.2	108,015	88.1	93,197	97.3
Ontario.....	110,595	73.8	125,310	89.1	115,453	95.2
Manitoba.....	25,208	48.1	41,464	84.3	39,081	90.2
Saskatchewan.....	18,213	16.3	43,778	42.3	61,626	65.6
Alberta.....	20,709	24.6	40,937	51.5	52,936	72.3
British Columbia.....	18,168	68.8	20,279	81.9	17,370	87.1
Yukon and Northwest Territories...	1	25.0	9	40.9	15	57.7
Canada.....	319,383	51.3	422,604	73.5	409,882	85.2

Farm Capital.—While the value of farm land and buildings in Canada increased by more than one half between 1951 and 1961 and the value of farm machinery and equipment increased by about one third, there was a slight decrease in the value of livestock and poultry on farms. Table 55 gives the value of farm capital by province for 1951 and 1961.

55.—Farm Capital, by Province, Censuses of 1951 and 1961

Province or Territory and Year	Value of Land and Buildings	Value of Machinery and Equipment	Value of Livestock and Poultry	Total Capital Value
	\$	\$	\$	\$
Newfoundland.....1951	14,658,139	1,416,655	3,581,985	19,656,779
.....1961	19,006,200	2,944,500	1,986,700	23,937,400
Prince Edward Island.....1951	47,843,719	16,261,195	23,048,291	87,153,205
.....1961	52,500,800	26,856,300	16,939,400	96,296,500
Nova Scotia.....1951	94,485,972	25,223,734	32,755,239	152,464,945
.....1961	89,262,800	30,252,100	26,073,900	145,588,800
New Brunswick.....1951	98,716,709	26,971,141	32,090,709	157,778,559
.....1961	90,114,800	31,682,200	23,566,000	145,363,000
Quebec.....1951	846,972,820	211,937,327	340,452,974	1,399,363,121
.....1961	1,014,681,500	301,257,000	308,941,100	1,624,879,600
Ontario.....1951	1,419,363,802	445,277,532	683,328,284	2,547,969,618
.....1961	2,572,302,700	579,281,700	590,011,600	3,741,596,000
Manitoba.....1951	528,872,527	231,801,397	156,112,868	916,786,792
.....1961	719,612,000	272,018,900	162,456,700	1,154,087,600
Saskatchewan.....1951	1,182,905,467	525,644,660	283,223,123	1,991,773,250
.....1961	1,866,523,300	686,825,700	321,010,300	2,864,359,300
Alberta.....1951	1,015,289,268	390,003,340	384,323,689	1,789,616,297
.....1961	1,715,367,200	550,875,600	451,254,100	2,717,496,900
British Columbia.....1951	278,068,232	58,760,356	71,437,080	408,265,668
.....1961	493,030,800	86,487,700	77,647,800	657,166,300
Yukon and N.W.T.....1951	30,500	14,925	2,713	48,138
.....1961	239,200	149,900	61,300	450,400
Canada.....1951	5,527,207,155	1,933,312,262	2,010,356,955	9,470,876,372
.....1961	8,622,641,300	2,568,631,500	1,979,948,900	13,171,221,700

Section 6.—International Crop Statistics

Tables 56 and 57 are based on estimates published in February and May 1963 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1961 and 1962 with average for the years 1955-59, in the leading countries of the world.

56.—Estimated Acreages and Production of Wheat Harvested in 1961 and 1962 in Specified Countries, with Average for 1955-59

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1955-59	1961	1962	Average 1955-59	1961	1962
	'000	'000	'000	'000 bu.	'000 bu.	'000 bu.
North America¹	71,130	78,970	72,680	1,606,000	1,570,000	1,702,000
Canada.....	22,704	25,316	26,893	465,437	283,394	557,554
Mexico.....	2,214	2,016	2,160	44,615	50,450	51,800
United States.....	49,128	51,551	43,545	1,095,357	1,234,743	1,091,787
Europe¹	71,870	66,640	71,200	1,855,000	1,865,000	2,170,000
Europe, West ¹	46,560	42,510	46,730	1,313,000	1,265,000	1,605,000
Austria.....	634	682	668	20,802	26,150	25,950
Belgium-Luxembourg.....	498	510	516	26,672	26,540	30,660
Britain.....	2,098	1,827	2,258	101,720	96,100	132,000
Denmark.....	179	260	382	10,521	15,950	24,070
Finland.....	314	586	706	7,514	16,930	15,500
France.....	10,432	9,876	11,174	358,210	351,800	510,000
Germany, West.....	3,045	3,435	3,245	138,676	148,000	168,000
Greece.....	2,704	2,637	2,689	57,762	58,560	62,540
Ireland.....	361	345	319	15,279	17,250	15,900
Italy.....	12,145	10,721	11,429	329,880	305,000	350,000
Netherlands.....	250	304	326	14,446	17,450	23,000
Norway.....	35	24	24	1,134	1,000	750
Portugal.....	2,009	1,606	1,631	24,286	15,700	20,300
Spain.....	10,728	8,700	10,300	165,400	123,680	180,000
Sweden.....	831	679	761	28,030	29,850	31,100
Switzerland.....	243	272	266	10,860	11,400	11,900
Europe, East ¹	25,310	24,130	24,470	542,000	600,000	585,000
Bulgaria.....	3,466	3,212	3,015	68,100	62,500	60,000
Czechoslovakia.....	1,818	1,589	1,500	54,500	60,000	53,000
Germany, East.....	1,026	932	939	42,160	38,200	40,200
Hungary.....	3,112	2,505	2,715	65,500	71,100	69,000
Poland.....	3,581	3,462	3,442	83,900	102,500	90,000
Romania.....	7,302	7,337	7,520	118,600	145,000	140,000
Yugoslavia.....	4,750	4,843	5,090	102,000	116,500	110,000
S.S.R. (Europe and Asia)²	159,000	155,000	167,800	1,910,000	1,900,000	2,000,000
Asia¹	142,010	138,170	145,010	1,895,000	1,865,000	2,020,000
China.....	—	—	—	900,000	—	—
India.....	30,448	32,047	33,240	330,926	403,900	434,000
Iran.....	—	—	—	95,950	103,000	99,000
Ra.....	2,540	3,200	—	27,118	30,000	38,000
Israel.....	137	118	—	2,418	2,000	—
Japan.....	1,551	1,603	1,585	50,482	65,440	60,000
Korean.....	638	—	—	5,458	5,100	4,000
Korea, Republic of.....	317	310	330	4,469	6,200	6,000
Lebanon.....	162	143	146	1,682	1,290	1,840
Pakistan.....	11,496	11,603	12,571	133,192	141,340	151,700
Sri Lanka.....	2,540	2,100	—	25,392	16,500	45,000
Turkey.....	10,990	15,500	—	232,000	225,000	245,000
Oceania¹	17,600	16,850	16,590	195,000	160,000	210,000
Australia.....	4,655	4,622	4,522	46,364	24,200	—
Egypt.....	1,561	1,436	1,510	53,778	52,800	57,000
Morocco.....	3,888	3,845	3,677	35,723	23,300	45,800
Tunisia.....	2,908	2,000	2,100	17,798	9,000	15,000
Republic of South Africa.....	2,906	3,100	2,950	27,554	32,500	28,000

For footnotes, see end of table, p. 486.

**56.—Estimated Acreages and Production of Wheat Harvested in 1961 and 1962
in Specified Countries, with Average for 1955-59—concluded**

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1955-59	1961	1962	Average 1955-59	1961	1962
	'000	'000	'000	'000 bu.	'000 bu.	'000 bu.
South America¹	18,680	16,030	15,890	323,000	265,000	265,000
Argentina.....	11,598	10,374	—	225,676	190,000	190,000
Brazil.....	2,386	—	—	24,460	7,500	—
Chile.....	2,030	2,094	2,076	40,597	39,350	42,000
Colombia.....	412	395	408	5,288	5,220	5,500
Peru.....	365	377	395	5,166	6,400	6,100
Uruguay.....	1,604	1,077	—	18,950	13,650	—
Oceania	9,732	14,906	16,317	173,134	234,690	299,800
Australia.....	9,629	14,723	16,122	168,320	246,000	290,000
New Zealand.....	103	183	195	4,814	8,600	9,800
World Totals¹	493,020	486,570	505,490	7,955,000	7,880,000	8,670,000

¹ Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. ² Tentative unofficial production estimates.

**57.—Estimated Production of Oats and Barley Harvested in 1961 and 1962
in Specified Countries, with Average for 1955-59**

Continent and Country	Oats			Barley		
	Average 1955-59	1961	1962	Average 1955-59	1961	1962
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
North America¹	1,669,000	1,300,000	1,531,000	671,000	517,000	605,000
Canada.....	375,000	283,965	493,610	238,000	112,640	165,800
Mexico.....	5,308	5,000	5,500	8,500	8,500	9,300
United States.....	1,278,145	1,011,398	1,031,743	424,448	395,669	429,400
Europe¹	1,310,000	1,260,000	1,195,000	1,050,000	1,305,000	1,450,000
Europe, West ¹	935,000	880,000	835,000	800,000	1,012,000	1,160,000
Austria.....	23,740	23,100	22,900	17,110	23,500	25,500
Belgium-Luxembourg.....	34,360	30,620	29,400	14,520	18,770	22,000
Britain.....	163,310	127,540	120,000	148,200	232,100	258,600
Denmark.....	51,210	47,120	42,020	110,090	129,000	152,500
Finland.....	48,160	64,830	42,500	15,010	16,800	12,400
France.....	224,270	178,500	179,100	197,890	248,600	272,000
Germany, West.....	156,630	131,800	160,700	111,700	125,000	172,000
Greece.....	11,000	10,550	10,740	10,950	10,800	12,100
Ireland.....	34,380	26,250	24,500	16,110	23,700	28,000
Italy.....	37,490	40,300	41,100	13,240	12,800	13,100
Netherlands.....	32,140	29,710	31,650	12,970	17,690	19,500
Norway.....	9,320	11,970	6,800	13,480	19,640	17,800
Portugal.....	7,450	4,420	6,920	3,850	2,400	2,900
Spain.....	37,000	34,100	35,100	82,470	80,100	98,700
Sweden.....	58,750	93,300	74,360	26,760	45,500	44,800
Switzerland.....	3,850	3,270	3,170	3,430	4,200	5,200
Europe, East ¹	375,000	400,000	360,000	250,000	293,000	290,000
Bulgaria.....	11,340	13,000	12,500	13,770	20,000	18,000
Czechoslovakia.....	64,800	66,000	60,000	61,700	73,000	75,000
Germany, East.....	66,740	59,000	57,000	37,760	43,500	51,000
Hungary.....	14,080	9,600	8,000	37,280	45,200	47,000
Poland.....	168,640	203,000	188,000	53,630	61,500	59,000
Romania.....	22,960	18,900	11,500	16,940	21,500	17,800
Yugoslavia.....	24,090	29,800	21,000	21,890	26,000	21,800

For footnote, see end of table.

**57.—Estimated Production of Oats and Barley Harvested in 1961 and 1962
in Specified Countries, with Average for 1955-59—concluded**

Continent and Country	Oats			Barley		
	Average 1955-59	1961	1962	Average 1955-59	1961	1962
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
U.S.S.R. (Europe and Asia) ²	845,000	600,000	440,000	440,000	610,000	720,000
Asia¹.....	105,000	100,000	105,000	845,000	835,000	880,000
China.....	65,000	—	—	311,000	—	—
Cyprus.....	—	—	—	3,046	—	—
India.....	—	—	—	125,356	131,630	143,100
Iran.....	—	—	—	42,530	46,000	43,500
Iraq.....	—	—	—	44,992	41,850	—
Israel.....	—	—	—	2,949	2,000	—
Japan.....	12,188	11,570	12,380	93,528	82,970	72,800
Korea, Republic of.....	—	—	—	38,260	47,200	44,000
Pakistan.....	—	—	—	6,620	6,300	6,200
Syria.....	456	200	—	16,064	—	27,500
Turkey.....	25,406	30,000	31,000	139,000	142,500	147,000
Africa¹.....	15,000	13,000	14,000	125,000	75,000	120,000
Algeria.....	4,840	1,500	—	34,000	15,000	—
Egypt.....	—	—	—	6,090	6,100	7,500
Morocco.....	1,570	1,000	1,790	55,250	25,000	55,000
Tunisia.....	660	—	—	8,440	4,000	5,000
Republic of South Africa.....	6,040	8,000	7,200	1,150	1,600	1,900
South America¹.....	77,000	65,000	50,000	76,000	65,000	50,000
Argentina.....	64,620	48,900	32,500	50,510	36,740	16,500
Chile.....	7,970	7,610	7,750	4,932	5,200	5,200
Colombia.....	—	—	—	3,293	4,640	4,960
Ecuador.....	—	—	—	3,928	3,230	3,800
Peru.....	—	—	—	8,551	10,000	9,400
Uruguay.....	2,798	4,440	4,270	1,457	1,400	2,440
Oceania.....	66,060	70,890	68,990	48,372	46,870	40,640
Australia.....	63,630	68,910	66,780	45,400	43,230	37,100
New Zealand.....	2,430	1,980	2,210	2,972	3,640	3,540
World Totals¹.....	4,080,000	3,410,000	3,405,000	3,255,000	3,455,000	3,865,000

¹ Estimated totals, which are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown.

² Tentative unofficial production estimates.

CHAPTER X.—FORESTRY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. At the same time, the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature—in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals.

Perhaps in no other country is the national wealth so dependent upon its forest resources and the success of its forest industries as in Canada. The annual forest harvest of some 3,200,000,000 cu. feet supports a highly complex and diversified export and domestic industry directly employing more than 300,000 persons and paying out \$1,200,000,000 annually in salaries and wages. The forests support 8,000 sawmills and 4,000 wood-using plants, many of them small units contributing appreciably to the income of local economies. The pulp and paper industry alone stands first among Canadian manufactures in terms of employment, wages paid, new investment and net value of output, and the sale of forest products abroad represents about 30 p.c. of the value of Canada's export trade.

Section 1.—Forest Regions†

The forests of Canada cover a vast area in the north temperate climatic zone. Wide variations in physiographic, soil and climatic conditions cause marked differences in the

* Sections of this Chapter that deal with forestry and the federal forestry program were revised in the Department of Forestry, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, were revised in the Forestry Section, Industry Division, Dominion Bureau of Statistics.

† A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by the Department of Forestry. Accounts of variations in Canadian physiography and climate are included in a special article on The Climate of Canada, appearing in the 1959 Year Book, pp. 23-51.

character of the forests in different parts of the country; hence, eight fairly well defined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:—

<i>Region</i>	<i>Percentage of Forested Area</i>	<i>Region</i>	<i>Percentage of Forested Area</i>
Boreal.....	82.1	Acadian.....	2.0
Great Lakes-St. Lawrence.....	6.5	Columbia.....	0.8
Subalpine.....	3.7	Deciduous.....	0.4
Montane.....	2.3		
Coast.....	2.2	TOTAL.....	100.0

Boreal Forest Region.—This Region comprises the greater part of the forested area of Canada, forming a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these are important in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward and, with increasingly rigorous climatic conditions, the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes St. Lawrence Forest Region.—Along the Great Lakes and the St. Lawrence River Valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, hickory and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars, and white birch, are intermixed and, in certain central portions as well as in the east, red spruce is abundant.

Subalpine Forest Region.—This is a coniferous forest found on the mountain plateaus in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship with the Boreal Region, from which the black and the white spruces and aspen intrude. There is also some entry of blue Douglas fir from the Montane Forest and western hemlock, western red cedar and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine, limber pine and, on the coastal mountains, yellow cedar and mountain hemlock.

Montane Forest Region.—The Region occupies a large part of the interior uplands of British Columbia as well as a part of the Kootenay Valley and a small area on the west side of the Rocky Mountains. It is a northern extension of the typical forest of much the western mountain system in the United States and comes in contact with the Coast, Columbia, and Subalpine Forests. Ponderosa pine is a characteristic species of the southern portions. Blue Douglas fir is found throughout but more particularly in the

central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region together with white birch are important constituents in the northern parts. The white spruce, though primarily boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

Coast Forest Region.—This is part of the Pacific Coast forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with abundant sitka spruce in the north and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common toward the timber-line. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have a limited distribution. Arbutus and Garry oak occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland. These are species whose centres of population lie southward in the United States.

Acadian Forest Region.—Over the greater part of the Maritime Provinces, exclusive of Newfoundland, there is a forest closely related to the Great Lakes-St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was formerly a more important forest constituent than at present, for the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, though present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region.—A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the blue Douglas fir which is of general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

Deciduous Forest Region.—A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes-St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

Section 2.—Forest Resources

The forested area of Canada is estimated at 1,713,755 sq. miles, and about 56 p.c. of that area is capable of producing merchantable timber. Of this productive area, 719,919 sq. miles are now accessible for commercial operations and the remainder, at present beyond the reach of economical transportation facilities, contains much valuable timber that will be brought progressively into commercial development as demand requires its use and as transportation becomes available. The great areas of forest considered commercially non-productive are nevertheless of significant value to the country in the influence they exert on climate, moisture and soil. Table 1 shows the areas of productive and non-productive forest land in each province and territory. Forested land, classified by type of growth and by province, is given in Chapter I at p. 31.

1.—Productive and Non-productive Forest Land, by Province, 1962

Province or Territory ¹	Productive Forested Land			Non-productive Forested Land	Total Forested Land
	Accessible	Potentially Accessible	Total		
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Newfoundland.....	28,216	5,661	33,877	53,915	87,792
Prince Edward Island.....	812	—	812	122	934
Nova Scotia.....	15,106	—	15,106	1,283	16,389
New Brunswick.....	23,755	79	23,834	492	24,326
Quebec.....	134,159	86,113	220,272	157,860	378,132
Ontario.....	130,633	35,108	165,741	96,006	261,747
Manitoba.....	36,761	21,422	58,183	64,637	122,820
Saskatchewan.....	25,503	15,505	41,008	76,730	117,738
Alberta.....	115,574	3,809	119,383	41,056	160,439
British Columbia.....	183,500	24,911	208,411	59,227	267,638
Totals, Provinces.....	694,019	192,608	886,627	551,328	1,437,955
Yukon Territory.....	14,200	27,900	42,100	39,100	81,200
Northwest Territories.....	11,700	21,900	33,600	161,000	194,600
Canada.....	719,919	242,408	962,327	751,428	1,713,755

There are more than 150 tree species in Canada, of which 31 are conifers, commonly called 'softwoods'. About two thirds of these softwoods and 10 p.c. of the large number of deciduous or 'hardwood' species are of commercial importance. Approximately 82 p.c. of the volume of merchantable timber is made up of softwood species. The dominant species existing in each forest region are given in Section 1. Detailed information is contained in Department of Forestry Bulletin No. 61, *Native Trees of Canada*.*

With help from the Federal Government, inventories of the forest resources are made periodically by provincial forest authorities and, with their co-operation, the federal department of Forestry compiles the National Forest Inventory. The latest estimates of the total stand of timber, by province and region, appear in Table 2. These estimates are subject to constant revision as more accurate and complete inventories are compiled.

The predominant part played by pulp and paper, lumber and other forest product industries in the development of Canada has resulted in a widespread tendency to evaluate the forest in terms of timber alone. However, a growing realization of the economic importance of the forest for its non-commercial values, such as recreation and wildlife and watershed protection, is bringing about increasing recognition of the true value of the forest and thus developing a broader concept of forestry.

* The sixth edition, 1961, is obtainable from the Queen's Printer, Ottawa, price \$2.

2.—Estimate of Standing Timber, by Type and Size and by Province and Region, 1962

Province or Territory and Region	Coniferous			Broadleaved			Totals		
	Large Material ¹	Small Material ²	Total	Large Material ¹	Small Material ²	Total	Large Material ¹	Small Material ²	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
Accessible									
Newfoundland.....	2,296	129,225	13,280	293	3,755	613	2,589	132,980	13,893
Labrador.....	1,101	63,348	6,485	83	2,185	270	1,184	65,533	6,765
Island.....	1,195	65,877	6,795	210	1,570	343	1,405	67,447	7,138
Prince Edward Island....	39	672	96	12	460	52	51	1,132	148
Nova Scotia.....	2,149	50,824	6,469	1,529	20,988	3,313	3,678	71,812	9,782
New Brunswick.....	4,265	89,569	11,878	2,626	26,772	4,901	6,891	116,341	16,779
TOTALS, ATLANTIC PROVINCES.....	8,749	270,290	31,723	4,460	51,975	8,879	13,209	322,265	40,602
Quebec.....	6,083	421,971	41,951	2,315	174,496	17,147	8,398	596,468	59,098
Ontario.....	16,785	404,493	51,167	17,633	187,843	33,599	34,418	592,336	84,766
TOTALS, CENTRAL PROVINCES.....	22,868	826,463	93,118	19,948	362,340	50,746	42,816	1,188,803	143,864
Manitoba.....	1,033	56,150	5,806	932	16,404	2,326	1,965	72,554	8,132
Saskatchewan.....	1,232	58,349	6,191	2,773	57,114	7,628	4,005	115,464	13,819
Alberta.....	12,343	196,235	29,023	11,937	132,818	23,227	24,280	329,057	52,250
TOTALS, PRAIRIE PROVINCES.....	14,608	310,739	41,020	15,642	206,336	33,181	30,250	517,075	74,201
British Columbia.....	244,265	677,754	301,874	13,228	60,284	18,352	257,493	738,037	320,226
Northwest Territories....	400	36,000	3,460	360	18,500	1,933	760	54,500	5,393
Yukon Territory.....	400	25,500	2,568	70	6,300	605	470	31,800	3,173
Totals, Accessible	291,290	2,146,746	473,763	53,708	705,735	113,696	344,998	2,852,481	587,458
Totals, Potentially Accessible.....	53,815	767,686	119,069	2,881	125,086	13,513	56,696	892,772	132,587
Canada.....	345,105	2,914,432	592,832	56,589	830,821	127,209	401,694	3,745,253	720,045

¹ Ten inches D.B.H. or over (suitable for saw timber).² Four to nine inches D.B.H. (units of 85 cu feet).

Tenure of Forest Land.—Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 22 p.c. of the productive forest land; the remainder comprises unalienated productive forest areas and federal lands such as Indian reserves military reserves, etc.

Woodlots on the 480,903 farms (1961) across the country comprise about 4 p.c. of the total accessible productive forest. These small wooded tracts, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also the woodlots of Eastern Canada are, in general, highly productive because they lie in the southern part of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

3.—Tenure of Occupied Productive Forest Land, by Province, 1962

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land			Privately Owned Land			Total Occu- pied Pro- ductive Forest Land
	Leases and Licences	Permits and Sales	Total	Leases and Licences	Permits and Sales	Total	Farm Wood- lots	Other	Total	
Newfoundland.....	25,975	—	25,975	—	—	—	31	1,716	1,747	27,722
Labrador.....	19,219	—	19,219	—	—	—	—	—	—	19,219
Island.....	6,766	—	6,766	—	—	—	31	1,716	1,747	8,503
Prince Edward Island.....	—	—	—	—	3	3	423	381	809	812
Nova Scotia.....	1,148	21	1,169	—	31	31	2,130	9,551	11,681	12,881
New Brunswick.....	10,403	—	10,403	—	358	358	1,923	10,686	12,609	23,370
Quebec.....	75,939	—	75,939	—	225	225	7,030	12,278	19,308	95,472
Ontario.....	83,073	—	83,073	—	1,269	1,269	5,086	11,105	16,191	100,533
Manitoba.....	1,488	847	2,335	—	1,292	1,292	2,327	1,489	3,816	7,443
Saskatchewan.....	1,363	875	2,238	—	592	592	3,338	2,492	5,830	8,660
Alberta.....	7,109	—	7,109	294	1,338	1,632	3,317	—	3,317	12,053
British Columbia.....	3,834	2,344	6,178	—	920	920	1,147	9,141	10,288	17,386
Northwest Territories.....	—	—	—	—	28	28	—	—	—	28
Yukon Territory.....	—	—	—	—	11	11	1	—	1	12
Canada.....	210,332	4,087	214,419	333	6,028	6,361	26,758	58,839	85,597	306,377

Section 3.—Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The average annual rate and cause of depletion of reserves of merchantable timber during the ten years 1951-60, together with annual data for 1960 and 1961, are given in Table 4. Of the total depletion of the forests in the ten-year period, 92 p.c. was utilized and 8 p.c. was destroyed by fire. (Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available.) The average annual utilization of 3,223,029,000 cu. feet comprised 48 p.c. logs and bolts, 40 p.c. pulpwood, 10 p.c. fuelwood, and 2 p.c. miscellaneous products. About 5 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The accessible portion of the productive forests of Canada, covering an area of 19,919 sq. miles, constitutes the reserve from which forest production will be obtained or many years to come. The supply of merchantable timber on this area is estimated at 587,459,000,000 cu. feet and the utilization in 1961 of 3,303,289,000 cu. feet therefore represented less than 1 p.c. of the accessible productive volume. However, it should be noted that utilization does not occur evenly throughout the accessible productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus, overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests and the forest industries are to maintain a dominant position in the Canadian economy.

The more efficient utilization of cut timber is an important factor related to forest depletion, for there is little doubt that in the past too high a percentage of the sawn log was discarded. However, changes of great significance have taken place recently in the uses of wood, permitting the utilization of sizes, qualities and species previously considered unmerchantable. The development and manufacture of rayon, cellophane and other products of the cellulose industry have extended the use of wood and the increasing production of plastic-wood products, fibre board and laminated wood has resulted in greater use of inferior grades of wood and species of trees and therefore in the more complete utilization of forest resources and the elimination of much waste.

4.—Forest Utilization and Depletion, 1960 and 1961 compared with Ten-Year Average 1951-60

Item	Usable Wood			Percentages of Total Depletion		
	Average 1951-60	1960	1961	Average 1951-60	1960	1961
	M cu. ft.	M cu. ft.	M cu. ft.			
Products Utilized—						
Logs and Bolts—						
Domestic use.....	1,543,657	1,722,114	1,667,238	43.9	45.3	28.0
Exported.....	7,352	5,898	17,753	0.2	0.1	0.3
Pulpwood—						
Domestic use.....	1,151,574	1,314,138	1,217,439	32.8	34.6	20.5
Exported.....	154,829	97,911	97,875	4.4	2.6	1.6
Fuelwood.....	304,696	243,453	242,608	8.7	6.4	4.1
Other products.....	60,921	47,951	60,376	1.7	1.3	1.0
Totals, Utilization.....	3,223,029	3,431,465	3,303,289	91.7	90.3	55.5
Wastage—						
By forest fires.....	293,263	369,606	2,649,996	8.3	9.7	44.5
Totals, Depletion.....	3,516,292	3,801,071	5,953,285	100.0	100.0	100.0

Forest Fire Statistics.—A record 8,655 forest fires burned in Canada during 1961. The area burned was nearly five times the annual average for the previous ten years. Volumes of timber lost in 1961 were about seven times greater than in 1960 and nine times more than average losses experienced between 1951 and 1960. Monetary losses were estimated at a record level of \$69,000,000 but this figure should be considered an approximation only since large portions of the area burned and timber damaged were in areas currently inaccessible for logging. Among the provinces, only Nova Scotia suffered less than average dollar losses and only Nova Scotia, Quebec and Alberta experienced smaller than average areas burned over.

5.—Forest Fire Losses, 1960 and 1961, compared with Ten-Year Average 1951-60

Item	Average 1951-60	1960 ^a	1961	
Totals, Fires.....	No.	5,496	7,346	8,655
Fires under 10 acres.....	"	4,392	6,074	6,881
Fires 10 acres or over.....	"	1,104	1,272	1,774
Area Burned.....	acres	1,951,302	1,593,460	9,313,479
Merchantable timber.....	"	324,225	427,081	2,858,924
Young growth.....	"	405,149	500,983	1,995,696
Cut-over lands.....	"	327,103	180,927	377,969
Non-forested lands.....	"	894,825	484,469	4,080,890
Average Size of Fire.....	acres	355	217	1,076
Merchantable Timber Burned—				
Large material (10 inches or over D.B.H.).....	M cu. ft.	99,755	159,696	1,873,013
Small material (4 inches to 9 inches D.B.H.).....	"	193,509	209,910	776,983
Estimated Values Destroyed¹.....	\$	7,007,622	10,417,736	69,125,608
Merchantable timber.....	\$	4,014,385	6,840,311	54,407,012
Young growth.....	\$	1,662,594	2,359,632	10,996,066
Cut-over lands.....	\$	300,165	511,335	956,520
Other property burned.....	\$	1,030,478	706,458	2,766,010
Actual Cost of Fire Fighting.....	\$	4,322,375	8,432,609	13,488,284
Totals, Damage and Fire Fighting Costs.....	\$	11,329,997	18,850,345	82,613,892
Area under protection.....	sq. miles	.	1,378,508	1,392,171

¹ Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

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6.—Forest Fire Losses, by Province,¹ 1960 and 1961, compared with Ten-Year Average 1951-60

Item	Average 1951-60	1960*	1961
Newfoundland—			
Forest fires..... No.	194	443	304
Area burned..... acres	19,177	70,750	1,047,914
Fire fighting cost and damage..... \$	131,541	410,289	8,281,471
Nova Scotia—			
Forest fires..... No.	310	605	460
Area burned..... acres	7,130	21,266	5,500
Fire fighting cost and damage..... \$	104,886	228,978	90,527
New Brunswick—			
Forest fires..... No.	241	483	320
Area burned..... acres	7,410	29,916	14,735
Fire fighting cost and damage..... \$	105,076	500,167	406,974
Quebec—			
Forest fires..... No.	857	874	850
Area burned..... acres	183,097	127,668	67,241
Fire fighting cost and damage..... \$	1,885,076	4,126,221	1,956,996
Ontario—			
Forest fires..... No.	1,288	956	1,305
Area burned..... acres	96,977	31,386	1,184,728
Fire fighting cost and damage..... \$	1,929,197	1,128,461	34,263,979
Manitoba—			
Forest fires..... No.	290	448	707
Area burned..... acres	246,994	412,149	2,724,978
Fire fighting cost and damage..... \$	445,112	996,680	7,233,726
Saskatchewan—			
Forest fires..... No.	153	236	507
Area burned..... acres	93,919	462,577	1,948,363
Fire fighting cost and damage..... \$	301,066	1,744,830	4,284,114
Alberta—			
Forest fires..... No.	258	474	811
Area burned..... acres	222,135	19,960	193,545
Fire fighting cost and damage..... \$	2,291,930	798,284	5,632,721
British Columbia—			
Forest fires..... No.	1,726	2,635	3,102
Area burned..... acres	383,025	285,820	1,227,159
Fire fighting cost and damage..... \$	3,508,825	8,591,970	17,809,674
Federal Lands—			
Yukon Territory—			
Forest fires..... No.	61	49	50
Area burned..... acres	235,766	21,102	95,276
Fire fighting cost and damage..... \$	286,321	31,949	753,428
Northwest Territories—			
Forest fires..... No.	66	92	167
Area burned..... acres	451,759	101,682	758,230
Fire fighting cost and damage..... \$	312,255	175,373	1,808,706
National Parks—			
Forest fires..... No.	32	36	63
Area burned..... acres	3,362	9,129	45,560
Fire fighting cost and damage..... \$	26,342	116,207	152,790
Indian Lands—			
Forest fires..... No.	2	65	2
Area burned..... acres	2	25,310	2
Fire fighting cost and damage..... \$	2	75,237	2
Other Federal Lands (incl. military areas)—			
Forest fires..... No.	17	15	9
Area burned..... acres	550	55	250
Fire fighting cost and damage..... \$	2,368	936	1,290

¹ Prince Edward Island is not included, but 1960 was a particularly serious year for forest fires in that province; estimated 25 fires burned 18,000 acres with damage assessed at \$221,000. Cost of fire fighting is not available. * Included in provincial figures.

As shown in Table 7, lightning caused 34 p.c. of the forest fires in 1961. Although of record proportions, this figure does not convey the full importance of lightning as a fire cause. In Ontario and New Brunswick, lightning-caused fires accounted for 99 p.c. and 90 p.c., respectively, of the areas burned. For Canada as a whole, more than 50 p.c. of the area burned resulted from lightning fires. Human carelessness remained a major cause of forest fires, smokers and campers being the worst offenders.

7.—Forest Fires, by Cause, 1960 and 1961, compared with Ten-Year Average 1951-60

Cause	Average 1951-60		1960		1961	
	No.	p.c.	No.	p.c.	No.	p.c.
Campfires.....	843	15	994	13	1,085	13
Smokers.....	1,014	18	1,055	14	1,596	18
Settlers.....	529	10	495	7	774	9
Railways.....	461	8	536	7	296	3
Lightning.....	1,236	23	2,237	31	2,901	34
Industrial operations.....	288	5	338	5	391	5
Incendiary.....	168	3	286	4	367	4
Public works.....	108	2	100	1	115	1
Miscellaneous known.....	590	11	846	12	638	7
Unknown.....	259	5	459	6	492	6
Totals.....	5,496	100	7,346	100	8,655	100

Section 4.—Forest Administration, Research and Conservation

Subsection 1.—Federal Forestry Program

Administration.—The Federal Government is responsible through several departments and agencies for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, Indian reserves, military areas, and forest experiment stations. Prior to Oct. 1, 1960, when the Department of Forestry Act became effective, research in forestry and forest products and certain other forestry activities was carried out by the Forestry Branch of the Department of Northern Affairs and National Resources under the authority of the Canada Forestry Act of 1949. Research in forest insects and diseases was conducted by the Forest Biology Division of the Department of Agriculture. These organizations were combined in the Department of Forestry.

The Department of Forestry Act (which repealed the Canada Forestry Act) set out the duties, powers and functions of the Minister of Forestry as extending to and including "all matters over which the Parliament of Canada has jurisdiction relating to the forest resources of Canada". The main functions of the Department include: (1) provision for the conduct of research relating to the protection, management and utilization of the forest resources of Canada and the better utilization of forest products; (2) undertaking, promoting or recommending measures for the encouragement of public co-operation in the protection and wise use of the forest resources of Canada; (3) co-operating with provincial governments and others by means of agreements relating to forestry matters; (4) provision of forest surveys and advice relating to the protection and management of federally administered forest lands; and (5) assuming responsibility for forest protection and management on federal lands at the request of the department or agency concerned. The Minister may consult with and inaugurate conferences of provincial or municipal authorities, universities, representatives of industry or other interested persons. The Act provides for the establishment of laboratories and other necessary research facilities, and of forest experimental areas on federal lands and for regulations for the protection, care and management of such areas.

To carry out its responsibilities, the Department maintains an Administration Branch, three Research Branches and an Economics Division. The Administration Branch includes those units of the Department not engaged in scientific research or economic studies. It is composed of five Divisions: Provincial Agreements, Forest Management, Information and Technical Services, Personnel Services and Administrative Services. The Provincial Agreements Division is concerned with the administration of federal-provincial cost-sharing agreements (see p. 500). The Forest Management Division conducts forest surveys on federal lands throughout Canada and provides advice and assistance regarding forest management to the administering agencies. It also provides for the management of forests including timber disposal in certain areas on behalf of other government departments, the most important of these being the military training area, Campagetown, in New Brunswick. Co-operation is extended to the External Aid Office in administering technical assistance programs involving forest surveys in other countries. The Information and Technical Services Division includes both operating and servicing functions in that it provides a program of public information on forestry as well as library, editorial and technical services. A comprehensive public relations and information program, in course of development, will include the production and distribution of a number of lay publications designed to increase public awareness of the importance of Canada's forest resources and the need of conserving them; the distribution of scientific publications and the interpretation of the scientific work of the Department to the general public; the use of press, radio, and television facilities; the production of exhibits, displays and posters; and the maintenance of a photographic library dealing with forestry subjects. The Personnel Services and Administrative Services Divisions are servicing elements for the Department as a whole.

The functions of the three Research Branches and the Economics Division are described in the following paragraphs.

Forest Research Branch.—The functions of this Branch are (1) to provide basic information on the characteristic occurrence, growth, development and behaviour of forest tree species throughout the wide range of forest types and environmental conditions of Canada and (2) to develop and test new or improved methods for use in forest management and forest fire control. The program is conducted through seven district offices across Canada and often in co-operation with other federal departments, provincial forest authorities, other research agencies, universities and industry.

Forest management research deals with silviculture, tree biology, forest land and forest mensuration. Many of the silvicultural studies involve (a) assessing the factors responsible for the success or failure of natural regeneration following various cutting methods and treatment of seed beds, (b) comparing different methods of seeding and planting, and (c) determining the effects of different methods of intermediate cutting on the development of residual trees and stands. Studies are made of successional changes in most of the important forest types. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection are aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity. The requirements of light, temperature and moisture that will produce optimum conditions for growth and development are being determined for the seedlings of many important species of trees. The physiological processes of growth and reproduction are under investigation for a limited number of species. In tree breeding, superior strains are selected or developed and there is a continual improvement in propagation and breeding techniques. Research in forest land encompasses forest geography and land classification. Research in soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Techniques used in mensuration are constantly under review and study; new methods are tested and developed. Research in forest inventory methods is of increasing importance because of the continuing programs of forest inventories being conducted in most provinces

and in the northern Territories. Data from air photographs are correlated with field observations to develop new techniques for estimating timber. The use of stand volume tables and various methods of field sampling are being investigated and compared. Research is continuing in methods for measuring tree images and tree shadows to determine heights, crown widths, canopy density and other data from photographs taken in different seasons of the year under various conditions. The use of large-scale photography of sample areas is also being investigated and studies are being made in the identification of species and sub-types.

Adequate protection of forests against fire is of vital importance in Canada. The Forest Research Branch works in full co-operation with provincial forest services in almost all phases of forest fire control. Major contributions of the Branch have been in the fields of fire danger measurement and fire control planning. Investigations are being made of forest fire behaviour, of the use of prescribed fire for hazard reduction and seed bed preparation, of how to improve the reporting of forest fires, and of fire damage appraisal and related factors in forest protection standards. Studies are being continued in the use of chemicals for fire suppression and pre-suppression, of fire fighting equipment and techniques, and of the use of aircraft in forest fire control. Another important field of endeavour is the study of lightning and other fire causative agencies.

Forest Products Research Branch.—The work of this Branch is directed toward obtaining the necessary background information and data on the properties of Canadian woods, developing new and better uses for wood products, improving manufacturing processes, and effecting more complete utilization of wood substances available from the forest. Its activities, covering every aspect of forest products except that relating to paper, include the determination of the physical, mechanical and chemical properties of wood and their relation to adaptability in use; studies of the factors affecting the quality of wood and of manufactured wood products; determination of the factors that cause wood waste in logging and manufacturing; research and investigation into fire retardant treatments, the preservative treatment and painting of wood and the use of wood for the manufacture of cellulose, wallboards, alcohols, organic acids, and extractives; studies to determine possible new economic and more valuable uses for woods; and research aimed at determining methods and means for the practical and economical utilization of all wood substances available from the annual timber harvest.

The program is conducted at two laboratories—one at Ottawa and the other at Vancouver—with units consisting of timber engineering, containers, glues and gluing, veneer and plywood, timber physics, wood chemistry, wood preservation, paints and coatings, wood pathology, wood anatomy, logging, lumber manufacture and lumber seasoning. The results of Branch Research are made available to the thousands of plants comprising Canada's timber manufacturing and wood-using industries. By means of numerous technical publications and through other channels, continuous effort is devoted to the widespread dissemination of research results.

Close liaison is maintained with the forest products industries and the users of timber to ensure that the work of the Branch is of optimum national benefit. Assistance is received from a National Advisory Committee comprising members representing lumber manufacturers and other wood-using groups. There is constant co-operation with various government units in the performance of many special research investigations concerned with the use of wood. Research into the use of wood in housing construction and as an engineered material continues as an important activity that is undertaken in co-operation with the National Research Council and the Central Mortgage and Housing Corporation.

Officers of the Industrial Liaison Service of the Branch visit sawmills and other wood-working plants in their respective regions to keep industry aware of research developments and technical advances which may assist in the solution of industrial problems. The field representatives also keep the laboratories informed of field problems on which research would be of value.

Branch personnel serve on many national technical committees such as those of the Canadian Standards Association, as well as on such international committees as those of the American Wood Preservers' Association, the American Society for Testing Materials, the International Union of Forest Research Organizations, and the Food and Agriculture Organization of the United Nations. Continuous collaboration is maintained with forest products laboratories in other countries for the dual purpose of exchanging information and avoiding unnecessary duplication of research.

Forest Entomology and Pathology Branch.—This Branch conducts research on forest insects and diseases and maintains regional laboratories and field stations in all principal forested regions of Canada. The forest insect and disease survey is a Canada-wide project conducted by the Branch in co-operation with the provincial forest services and forest industries, the primary objective of which is to maintain an annual census of forest insect and disease conditions, and to detect and predict the occurrence of outbreaks. Results of the survey are made immediately available to the owners and operators of forest lands for use in planning salvage programs and directing control operations or other measures to reduce damage. An important secondary objective of the survey is extension of knowledge of the insects and fungi affecting forest trees, including their life histories, ranges of distribution, and host-parasite relationships.

The research programs of the regional laboratories are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects, and diseases of tree seedlings in forest nurseries. A recent development is the initiation of investigations of virus diseases of forest trees. Laboratory research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi in the forest environment. Problems of broad national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated by Branch sections, which are appropriately staffed and equipped for research in these special fields.

The Forest Entomology and Pathology Branch also carries out experiments in control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating possibilities of eradication or control, or other applications of research results. Recent examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation with local authorities on the Dutch elm disease problem in New Brunswick, Quebec and Ontario, designed to limit spread and damage through control of the disease vectors and sanitation procedures; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick and Quebec, and the black-headed budworm, the saddle-backed looper and the ambrosia beetle in British Columbia.

Economics Division.—The functions of the Economics Division are to advise the Department regarding the economic implications of present and proposed policies; to keep the economic position of Canada's forest industries under review; to keep in touch with forestry and international developments in other countries; and to contact economic studies relating to forestry in Canada. Co-operation with international organizations concerned with forestry and in which Canada maintains membership includes the preparation of quarterly and annual statistical reports to the Food and Agriculture Organization of the United Nations and to the Organization for Economic Co-operation and

Development. A National Forest Inventory is compiled annually from information supplied by provincial governments and published by the Dominion Bureau of Statistics in a series entitled *Canadian Forestry Statistics*. This information is also included in Canada's submission to FAO for use in compiling the World Forest Inventory every five years.

Federal-Provincial Forestry Agreements.—The passing of the Canada Forestry Act in 1949 was an event of great significance to federal-provincial relations in the field of forestry, as authority was given to the then Minister of Mines and Resources to "enter into agreements with any province for the protection, development or utilization of forest resources". Subsequently this Act was repealed and replaced by the Department of Forestry Act, 1960. Since the beginning, agreements have been entered into with most provinces; these now provide for federal financial support for programs of forest inventories and reforestation, for the purchase of capital assets to be used in forest fire protection and for forest access and stand improvement projects.

Under the Department of Forestry Act, a new forestry agreement was entered into with the provinces for a term of two years starting Apr. 1, 1962, covering in a "single package" the federal aid formerly available under three separate agreements. The amount of federal aid provided for the period is \$16,000,000.

The main feature of the new agreement is flexibility. A province may spend its entire allotment for forest access projects, which include construction of access roads and airstrips for forestry purposes. Up to 60 p.c. of the provincial allotment may be claimed for inventory, reforestation, fire protection and, for the first time, stand improvement projects. A province, therefore, has wide discretion in allocating federal aid among the specified fields of work. Federal assistance is based on payment of 50 p.c. of provincial costs, but reforestation is the one exception. The Federal Government pays \$15 per thousand trees planted, \$2 per acre seeded and \$4 per acre seeded with ground preparation. In addition, 25 p.c. of the cost of establishing new forest nurseries is contributed.

Costs of management-type surveys are included in the new agreement as sharable and the reforestation of occupied or unoccupied Crown land qualifies for assistance provided it is carried out by the province.

Since 1951, more than \$32,000,000 in federal funds have been contributed to the provinces under the main forestry agreements, plus \$5,000,000 for aerial spraying against budworm infestations in New Brunswick and, on a smaller scale, in British Columbia and \$472,000 under a special stand improvement agreement with the Province of Nova Scotia, designed to provide woods experience for coal miners laid off in the Cape Breton area.

Work accomplished with federal assistance has included the completion of forest inventories by seven provinces. Most of the provinces have instituted programs concerned with management-type inventories and at the same time are maintaining their initial inventories in a reliable state. As a result of these inventories, new woods operations have sprung up, particularly in the British Columbia interior, and new pulp and paper mills have been built or are planned in other areas of Canada. The Federal Government has contributed under the agreements to the establishment of 15 new forest nurseries and the planting of 178,000,000 trees. Federal contributions of more than \$7,000,000 have been used for the purchase of fire towers, radios, motor vehicles, bulldozers, muske tractors, power pumps, hand pumps, hose, aircraft, and the construction of buildings required for the prevention, detection and suppression of forest fires and for the charter of aircraft for patrol, transportation and water-dropping purposes. Several hundred access projects designed to improve protection and permit the management of undeveloped forest areas have been undertaken, with the Federal Government contributing more than \$12,000,000.

Subsection 2.—Provincial Forestry Programs

All forested land in provincial territory, with the exception of the minor portions in National Parks, federal forest experiment stations, military areas and Indian reserves (see Table 2, p. 32), is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland.—Geographically, the Province of Newfoundland has two separate regions—the Island and Labrador on the mainland. The productive forested land of the Island is estimated at 12,998 sq. miles and of Labrador at 20,879 sq. miles, a total of 33,877 sq. miles. Only 578 sq. miles are classified as farm woodlots. Most of Labrador's forests are leased but are as yet virtually untouched.

A large part of the forest land in the interior of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local population. Within this coastal forest belt, every household has legal right to cut 2,000 cu. feet of wood a year for domestic use. This form of cutting is generally without intense control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by forest officers. Approximately one half of the Crown forests are at present under management.

Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government. This type of permit is generally preceded by advertising of standing timber for sale by tender, the timber involved usually being over-mature or damaged by fire, insects or storms.

The Island of Newfoundland is divided into three Forest Regions, each under the control of a Forest Supervisor; the regions, in turn, are each divided into five districts. Districts are headed by a Forest Inspector having a staff of wardens and rangers. Twenty-eight well-equipped forest fire depots and 21 lookout towers, connected by radio-telephone, are operated by the Newfoundland Government, and many others are operated by the two paper companies, the Newfoundland Forest Protection Association and the Canadian National Railways. Aircraft, equipped with water-dropping tanks, are stationed at Gander throughout the fire season; they patrol forest areas and transport equipment and crews when necessary. Helicopters are used as well. Forest fire protection facilities have also been established in Labrador, the main base being at North West River near Goose Airport, and a sub-depot in the Carol Lake iron ore development area. The permanent forestry staff of the Newfoundland Department of Mines, Agriculture and Resources, numbering 75, is augmented by a like number of seasonal employees during the forest fire season. The two paper companies maintain their own fire protection organizations.

Forest research for Newfoundland is performed by the federal Department of Forestry. No reforestation is done in the province.

Prince Edward Island.—Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division of the Department of Industry and Natural Resources is concerned mainly with planting, woodlot management and fire protection. A small nursery, established jointly with the Federal Government, deals with the Island's needs by providing planting stock for the reforestation of waste lands, the cost of which is shared by the Federal Government, and fulfilling the requirements of private individuals at a reasonable cost.

In proportion to its size, Prince Edward Island exports a great deal of pulpwood. This export, combined with the fuelwood and lumber cut each year, led to the inauguration of a program designed to educate the owner in the proper care and management of his woodlot.

Fire protection does not usually constitute too great a problem. Wooded areas are scattered in patches throughout the province and, since a network of roads makes all woodlots accessible, equipment can be brought to the scene of a fire quickly and easily. Research is limited mainly to reforestation and woodlot management problems.

Nova Scotia.—The land area of Nova Scotia is 20,402 sq. miles. Of that area, 16,389 sq. miles are classed as forested, 92 p.c. of which is regarded as productive. For Canada as a whole, 91 p.c. of the forested land is held by the Crown in the right of the federal or provincial governments but in Nova Scotia only about 22 p.c. is so held.

The provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Similarly, trained personnel are associated with the forest industry in the administration of privately owned forest lands. The Department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression on all lands, regardless of tenure. Forest fire detection is facilitated by 30 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Well-equipped fire suppression crews and rangers are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are in operation some 500 sawmills of all sizes, one newsprint mill, two groundwood pulp-mills and a chemical pulpmill. These mills, along with the pulpwood export trade, pit prop production, boxwood and barrel production, as well as other facets, produced about 245,000,000 ft.b.m. of lumber and about 450,000 cords of round products in 1962. Recently, several large, more efficient stationary lumber mills have been established, equipped for the production of pulp chips from sawmill residue. Tremendous strides have been made in the utilization of slabs, edgings and trim for this purpose and a profitable increase of 30 p.c. has been achieved in utilization of the total wood fibre of the sawlog.

An active reforestation program has been conducted for many years. Although not as ambitious an undertaking as in some parts of Canada, the program is being expanded in areas where there are less fortunate circumstances relative to natural regeneration. There are six forest nurseries in operation throughout the province. Forest management programs include the construction of access roads into Crown land timber areas and stand improvement under the federal-provincial agreement. Timber, pulpwood and Christmas trees are sold through public tender and cutting is done under the recommendation of the district foresters of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation (see p. 377). Investigations involve stand improvements, cutting methods, and insect and disease activities. Extension projects include an active fire prevention campaign, a motion picture program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, and preparation of articles for general distribution, for newspapers and for magazines.

New Brunswick.—Of the total area of New Brunswick (28,354 sq. miles), approximately 85 p.c. is classed as productive forest, of which the Crown, in right of the province owns about one half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The report of a provincial forest inventory, part of the national forest inventory, was published in 1958. The total volume of wood in merchantable sizes is estimated at 16,900,000,000 cu. feet; coniferous species make up 71 p.c. and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Lands and Mines which also carries out duties in connection with game management and protection, colonization, provincial parks and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 195

by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest Management licences issued by the province authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Stumpage dues are paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the federal Department of Forestry in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government, and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in Forestry leading to B. Sc.F. and M. Sc.F. degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the governments of New Brunswick and Nova Scotia and private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The Provincial Department of Agriculture also provides an expanding extension service to the owners of farm woodlots.

Quebec.—The forested lands of the Province of Quebec cover an area of 378,132 sq. miles extending from its southern borders to latitude 52° north, between the frontier of Labrador in the east, and the Eastmain River Basin in the west. Of this total, 89,131 sq. miles are classed as occupied productive forest land, 23,175 sq. miles of it privately owned, 227 sq. miles federal Crown forests and the remainder provincial Crown land on which leases and permits have been granted. Thus, approximately 256,000 sq. miles of the forest lands of Quebec are inaccessible or vacant. About two fifths of the annual cut comes from privately owned lands.

The limits reserved for forest industries are administered by the Department of Lands and Forests and the technical work such as inventory, reforestation, supervision of cutting, control of culling, verification of plans for development, collection of stumpage dues, etc., is the responsibility of the Forest Service. These limits are either leased by auction after public notice has been given or assigned under a special law. The price of the licence is fixed by auction or by Order in Council subsequent to specific legislation. The government reserves the right to dispose of the water powers situated on the limits leased.

A tree-felling permit, which is valid for one year, is renewable if the holder has complied with the conditions imposed; it may be transferred with the authorization of the Minister of Lands and Forests. The lessee of a limit must pay a ground rent in addition to the price of licence and must forward, three months before the cutting begins, a plan of operations. Wood cut must be measured by a licensed culler and at the end of the operations the limit holder must produce a sworn statement of quantities cut.

The Forest Service endeavours to promote the use of silvicultural methods among the owners of farm woodlots and small forest areas.

Quebec's forest protective system comprises three organizations—the Protective Service, the protective associations and the non-affiliated lease holders or owners. The Protective Service is a government body established within the Department of Lands and Forests in 1924 to enforce legislation and regulations governing forest fire protection and to protect vacant Crown lands, township reserves and colonization territories. The protective associations, of which there are six, are syndicates of lease holders and of owners who have availed themselves of their right to form an association to satisfy the law which compels them to protect their limits or private forests of 2,000 acres or over. Members assume operating expenses in proportion to the area owned by each but the Department assumes half the costs of fire fighting incurred by the associations. The third group is composed of lease holders and of owners who prefer to discharge their obligations personally as far as forest protection is concerned. They enjoy the same privileges and their obligations are the same as those imposed upon the associations.

To perpetuate the forestry program of the province, the Department has established a number of nurseries, the first at Berthierville in 1908. This nursery has three sections: one wooded with a variety of valuable species of mature age, one serving agricultural purposes, and another devoted to forestry experiments and the cultivation of trees for reforestation or ornamentation. More recently, the Grandes Piles nursery and the Gaspé nursery were organized and there are also nurseries in the following counties: Abitibi-East, Témiscamingue, Saguenay, Îles de la Madeleine, Rimouski, Roberval, Rivière du Loup, Témiscouata and Chicoutimi. Their object is the preparation of plants for reforesting nearby districts. 'Floating' nurseries, supervised by the engineers of the Forest Extension Bureau and intended especially for growing reforestation plants for private properties, are located at Pont Rouge, Sherbrooke, Scott, St. Hyacinthe, Victoriaville, Mont Joli and St. Pascal. The plants are supplied free of charge on request. A dynamic reforestation program is now under way in the province, with an ultimate objective of 10,000,000 plants yearly on private grounds.

The Bureau of Silviculture and Botany and the Forestry Products Laboratory, both subsidized by the Department, are actively engaged in scientific research work in the forestry field. The Bureau studies the possibilities of utilizing spoil-heaps of gold and asbestos mines, tests the fertility of soils in the spruce groves, classifies forests according to type of vegetation, and studies growth and yields of stands in the timber limits by means of permanent research spots. The Forestry Products Laboratory, located at the Duchesnay Forestry Station, studies developments in the field of chemical conversion of wood and in the use of forestry by-products.

Ontario.—The management of the forest resources of this province is based upon the Crown Timber Act and the management unit is used as the basic administrative area. For each management unit a plan is prepared according to the Manual of Management Plan Requirements and is submitted to the Minister of Lands and Forests for analysis and approval. All forest activities contemplated during the operating period—cutting and re-establishment and tending—are listed in detail in the operating plan, which is part of and carries out the intent of the management plan. Management plans are revised every 20 years on the up-to-date data of new aerial photographs and a forest re-inventory. The number of management units is subject to change at the time of plan revision, owing to abandonment or acquisition of timber licences and to division or consolidation of management units. During 1962, 204 management units, classified by ownership and the rights to timber, were recognized: 78 Crown management units, 79 company units, 42 agreement forest units, and five nursery forest units. The 78 Crown management units, for which the plans are prepared by Department staff, occupy 53,829,120 acres of these units, one is operating under a revised plan, 14 are undergoing scheduled plan revision and 63 are operating under the initial plans. The 79 company management units, for which the management plans are prepared by the licensees, occupy 63,991,68 acres; of these units, 67 are operating under approved management plans and 12 are either in the process of revision or initial preparation. The plans for the 42 agreement forest units are scheduled for preparation by Department staff over an eight-year period. The plans for the five forests, adjacent to the forest tree nurseries operated by the Department, cover approximately 9,000 acres and will be prepared by the Department staff upon completion of the inventory program.

On Crown lands during 1962, 90 stand improvement projects were carried out on a gross area of 23,218 acres. These projects were designed to secure adequate regeneration following cutting operations or to improve growth and quality of young stands of timber. In addition, 23 stand improvement projects, covering 1,304 acres, were carried out by junior rangers during the course of their summer training. During the year, on Crown lands and agreement forests 30,932,000 trees were planted on 49,303 acres and two helicopter seeding projects on 255 acres were undertaken. Stand improvement work was carried out on 7,759 acres of 37 agreement forests including harvest cutting, cleaning

pruning, thinning and girdling. In addition to normal woods labour, over 6,000 man-days of inmate labour from three minimum security camps (see p. 404) were used on stand improvement projects in Crown and agreement forests units.

The volume of wood of all species cut from Crown land during the year ended Mar. 31, 1962 was lower by approximately 1,000,000 cu. feet than that cut during the previous fiscal year, representing a decrease of 4.0 p.c. in the cut of softwood species and 1.4 p.c. in the cut of hardwoods. The volume of primary pulpwood species cut (spruce, balsam, and jack pine) increased by about 4,400,000 cu. feet. An over-all decrease in the pulpwood cut is accounted for by a reduced cut in other softwood species.

Forest research was continued in 1962 on the growth characteristics and relationships in their stands of the principal tree species, with the object of developing cultural practices to ensure maximum production. The site research program continued to provide a framework for forest management by classifying and mapping combinations of land form, soil and climate, and rating the various combinations for tree growth. The applicability of this classification to land use was tested. Tree breeding was continued in the development of disease-resistant white pine and poplars of rapid growth and good form. Experimental work was pursued toward the improvement of nursery and planting techniques. Mensurational studies involving growth and yield, and possible substitutions for log scaling were carried on. Testing of pumps and other forest fire protection equipment continued. A special study was made of airborne infrared heat sensory equipment for fire detection.

During the 1962 forest fire season, 1,510 fires occurred in Ontario, burning an estimated total of 13,700 acres. Although the number of fires was about 15 p.c. above the annual average for the previous decade, the area burned was the third lowest on record. Lightning accounted for 20 p.c. of the fires reported. The Department's fire-fighting fleet consisted of 33 *Beaver* aircraft, 10 *Otter* aircraft and one *Super Widgeon* and operated out of 28 air bases during the fire season, logging 14,485 hours of flight time; 11 of these bases were operated throughout the year. In addition, five leased *Bell Super-G* type helicopters were used between May 1 and Sept. 30 and a large *Vertol H21* with a 200-gal. water tank was employed on fires in the Kapuskasing and Sudbury areas.

Manitoba.—The forests of Manitoba are administered by the Forest Service, a Branch of the Department of Mines and Natural Resources. The Service is headed by a Provincial Forester and for purposes of administration the province is divided into eight Forest Regions each in charge of a Regional Supervisor responsible to the Provincial Forester for forest activities within his region. The Forest Service is also responsible for the development, maintenance and operation of parks and recreation on Crown lands throughout the province (see p. 40).

The cutting of timber is governed by timber sale, licensed timber berth, pulpwood lease, or timber permit. Timber sales are disposed of by public auction or sealed tender and cover periods of from one to seven years; timber berths cover certain areas granted before 1930, the date of the transfer of the natural resources from the Federal Government to the province; pulpwood leases are granted over an area of 2,748 sq. miles; and timber permits are granted to settlers and small operators at appraised rates for a period of one year or less. On the basis of a forest resources inventory completed in 1956 and other information, working plans with annual allowable cuts on a sustained-yield basis have been brought into operation in the more accessible areas.

Forest fire protection is a most important activity of the Forest Service. Fires are detected by air patrol, lookout tower and road patrol, and rapid communication is maintained within the Service by radio and telephone. The Air Service transports men and equipment to fires in areas beyond the reach of roads. The main air base is at Lac du Tonnet and summer air bases are maintained at The Pas, Norway House and Thicket Portage. The total area under fire protection is about 97,000 sq. miles.

Regeneration of the forest is dependent mainly on natural means although over 3,000,000 trees were planted during the past ten years as part of the federal-provincial

agreement (see p. 500). The Pineland Forest Nursery is operated at a point near Hadashville to supply planting stock for denuded areas of Crown land and to furnish farmers with shelterbelt and woodlot seedlings.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas. The Department co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases. The Forest Service also carries out public education in the fields of fire prevention and forest conservation. Use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, etc.

Saskatchewan.—The forests of Saskatchewan are located mainly in the northern half of the province and cover 147,360 sq. miles, including watered areas, or 58 p.c. of the total area. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of six divisions—Administration, Fire Control, Forest Management, Forest Research, Inventory and Silviculture—is responsible for developing and evaluating forest policies and management programs based on the findings of inventory and research. The responsibility for carrying out such policies and programs is borne by the Regional Administration Branch. For purposes of resource administration, the province is divided into five regions, each under the supervision of a Regional Superintendent. The regions are subdivided into Conservation Officer Districts which vary in size according to resource base and population to be served. Close liaison is maintained between the Forestry Branch and the Regional Administration Branch.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 70 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by three aircraft on regular patrol duty during the high-hazard periods. A group of smoke jumpers, trained to parachute on remote fires, is in constant readiness during the fire season and takes immediate suppression action which it maintains until relieved by overland crews. Northern Saskatchewan's communication system, with more than 850 two-way radio sets in operation in towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppression of forest fires. These activities have been assisted recently by the use of helicopters.

Alberta.—The 159,064 sq. miles of provincial forest in Alberta are administered by the Alberta Forest Service of the Department of Lands and Forests at Edmonton. The Service is composed of four forestry branches under a Director of Forestry—Administration, Forest Protection, Forest Management and Forest Surveys.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, deals with personnel and conducts a Forestry Training School which offers in-service training for forest officers and other employees.

The Forest Protection Branch has charge of the protection of the forests. For ease of administration the forested area has been divided into seven Divisions, each responsible for the forest within its boundary. These Divisions are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his divisional superintendent. The divisional staffs include: forest superintendent, assistant forest superintendent, divisional forester, chief ranger, mechanical foreman, chief check scale, assistant check scaler, divisional clerk, assistant clerk, radio operator, stenographer, an seasonal help such as standby fire crews, forest lookout men and general labourers and construction crews. These employees are responsible for fire prevention and suppression, supervision of logging and milling operations, timber cruising, and construction and maintenance of forestry projects.

The functions of the Forest Management Branch include the approval and acceptance of management and annual operating plans prepared for Crown lands, proper land

use and proper disposal of Crown timber. This extends to all phases, including acceptance of applications, cruising of timber, drawing up of contracts, periodic inspections of areas to assure proper logging and utilization practices, scaling of products cut, collection of dues and reforestation of areas denuded through cutting, fire, etc.

The Forest Surveys Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management and protection plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; and provides technical drafting and mapping services to the Forest Service and general public.

Conservation of 9,000 sq. miles of forest comprising the Rocky Mountains Forest Reserve is administered by the Alberta Forest Service. The area is composed of three forests which are subdivided into ranger districts. The Superintendent in charge of each forest is responsible to the Director of Forestry; his decisions are based on policies formed by the Board, which comprises one federal and two provincial members. This Reserve includes the headwaters of the main prairie river system.

Research in general is carried out by the federal Department of Forestry, which maintains the Kananaskis Experiment Station.

British Columbia.—The productive forest land of British Columbia in 1958 was inventoried at 208,411 sq. miles and, in addition, there were 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurred on 95,739 sq. miles; 84,275 sq. miles carried matured timber with a total volume of 251,000,000,000 cu. feet; 28,397 sq. miles, including areas of recent burn, cut-over or windfall not yet re-stocked, were unclassified.

For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision of the Forest Districts into Ranger Districts. There are approximately 25 Ranger Districts in each Forest District. Twelve directional, servicing or policy-forming divisions constitute the head office of the Forest Service at Victoria.

Efforts continue to bring British Columbia's forest resources under sustained-yield management and the forest industries are making progress toward more complete utilization of their raw materials. The problem is urgent despite the fact that, with a present annual cut of approximately 1,340,000,000 cu. feet, the total inventory would appear sufficient to support present needs in perpetuity. One of the more spectacular results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province. The over-cut coast (wet belt) forests now account for about 58 p.c. of the total forest cut each year and the interior cut for almost 42 p.c. For all practical purposes, the entire interior forest is publicly owned; the great majority of privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence, which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest and for the best possible return, in exchange for the right to the timber crop on the area. Tree Farm Licences are subject to re-examination for renewal every 21 years. Provincial forests, Public Working Circles, and Sustained-Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Of major interest is the establishment of the first "pulp harvesting" area in the vicinity of Prince George. This plan is unique in North America, calling for the integration of a "saw-log" economy with a new pulp industry. Management, silviculture, rebuilding and protection on such areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and those Timber Sales issued outside 'regulated' areas.

The need for a more effective forest fire suppression capability becomes increasingly urgent as the program of planned, sustained-yield management of the resource expands. Improved fire fighting techniques, the use of aircraft for patrol, transportation and fire bombing, employment of helicopters for rapid movement of fire suppression crews, and a gradually expanding system of lookouts are employed. However, the problem of accessibility remains serious. Close liaison with the federal Department of Forestry, which maintains laboratories in Vernon and Victoria, provides information about insect and fungal enemies of the forest.

Subsection 3.—The Pulp and Paper Research Institute of Canada*

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodland operations and pulp and paper mill operations. In addition, in co-operation with McGill University, it trains postgraduate students who are working toward master's and doctorate degrees in physical chemistry, wood chemistry, or chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute occupies a building on the McGill campus erected by the pulp and paper industry and a building at Pointe Claire on the western outskirts of Montreal constructed by the Government of Canada. The Institute's facilities include: organic and physical chemistry, physics, hydraulics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp, and paper. It has a staff of about 180.

The Institute's research activities comprise a basic program in pulp and paper research and in woodlands research, contract research, and technical services. The basic pulp and paper research program is supported by assessments from the Maintaining Membership (some 42 companies, representing more than 100 mills and about 95 p.c. of the total production of the Canadian industry) and by a grant from the Canadian Pulp and Paper Association. The woodlands research program is supported by assessments on all member companies of the Canadian Pulp and Paper Association east of the Rockies that use pulpwood and by a grant from the Association. Both programs comprise research of interest to the industry broadly, as distinct from that which is the concern of a single company only.

The projects in the basic programs range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into seven broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control, product quality and waste utilization. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles and for major engineering research and development projects which individual pulp and paper companies would find difficult to justify if the costs were not shared. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 35 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The head of the Institute's Wood Chemistry Division, who is also Chairman of the Chemistry Department

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and the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin and hemicelluloses. The head of the Institute's Physical Chemistry Division, also a Research Associate in the McGill Chemistry Department, directs graduate student work in the physical chemistry of fibres, e.g., the forces that cause cellulose fibres in a water suspension to mat together to form paper. An Associate Professor of Chemical Engineering at McGill, who is a consultant to the Institute, directs graduate students in such chemical studies as the rate of drying of droplets and fibres. In addition, other members of the Institute's staff who likewise hold concurrent honorary positions at McGill assist in this student training program.

The Institute also undertakes contract research projects on a cost-reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment and the study of the rapid deterioration of paper machine wires.

A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which stocks bibliographies, abstracts, translations and critical reviews for the use of the scientific staff and the industry.

Section 5.—Forest and Allied Industries

This Section is concerned with the many industries employed in the felling of timber in the forest and its transformation into the numerous utilitarian shapes and forms required in modern living. The basic industries provide the raw materials for sawmills, pulp and paper mills and for a wide range of secondary industries that convert the products of the basic industries into more highly manufactured goods such as veneers and plywoods, sash and doors, furniture, and a vast range of industries using wood in any form in their processes. These industries, especially the pulp and paper industry and the lumber industry, contribute substantially to the value of the export trade of Canada and thereby provide the exchange necessary to pay for a large share of the imports purchased from other countries, particularly the United States.

Technological changes and market shifts are causing Canada to lose some of the unique advantages it has enjoyed in the forest products field. In an effort to remain competitive, changes are being brought about in the structure of Canadian forest-based industries and the technologies employed. Much emphasis is also being placed on better utilization of the forest resources.

In British Columbia there is a continuing development of the pulp and paper industry which, unlike that in Eastern Canada, is integrated to a high degree with the lumber industry. An important feature of this integration is the use of smaller and defective logs uneconomical for the manufacture of lumber, and the use of sawmill and veneer mill residue in the form of pulp chips. In Eastern Canada the most significant developments in the pulp and paper industry have been the increasing use of hardwood species in pulp manufacture and the increase of speeds in paper machines which has improved productive capacity at relatively low costs. There is also continuing construction of new plants, notably in the Maritime Provinces, and this is leading to improved utilization through the use of sawmill residues for pulping material.

Significant changes are also taking place in the lumber industry in Eastern Canada. Sawmills are undergoing a gradual process of concentration into larger and more efficient units and employing modern electric, hydraulic and pneumatic equipment which permits

a high degree of mechanization and quality control. There is also a trend toward more complete integration through the acquisition of veneer and plywood mills and board plants. These factors are naturally leading to a higher degree of utilization which is exemplified by the conversion of sawmill residue for pulp chips.

The logging industry has been highly mechanized in Western Canada for a number of years and mechanization is now progressing rapidly in Eastern Canada, raising the output per man-day and leading to stabilization of employment in the woods. Ten years ago mechanical saws were just beginning to find general acceptance, but now they are found in all woods operations and the bucksaw is almost non-existent. Loading and transportation of logs and pulpwood is being done mechanically to an increasing extent with a consequent continuous reduction of the horse population in the woods. New and better logging machines are constantly being developed and experiments with pulpwood harvesting combines promise a high degree of mechanization in the woods wherever terrain conditions permit.

These and other changes are reflected in the following statistical data.

Subsection 1.—Woods Operations

In connection with operations in the woods, the forests provide not only the raw materials for the sawmills, pulp mills, veneer mills, charcoal, excelsior and other plants, but also the logs, pulpwood and bolts for export in the unmanufactured state, and fuel, poles, railway ties, posts and fence rails, mining timber, piling and other primary products that are finished in the woods ready for use or export. A number of minor forest products help swell the total, such as Christmas trees, cascara bark, balsam gum, resin, etc.

Estimates of woods operations attempt to give actual production figures for all items and are based partly on provincial forest service data for volume. Value, as currently estimated, excludes transportation costs up to and including 1960. In 1961, transportation costs are included to conform with the total activity concept.

8.—Value of Woods Operations, by Product, 1957-61

Product	1957	1958	1959	1960	1961 ¹
	\$'000	\$'000	\$'000	\$'000	\$'000
Logs and bolts	409,226	311,746	344,424	385,924	404,016
Pulpwood	340,235	275,154	320,244	356,915	369,663
Fuelwood	36,656	29,105	26,520	36,896	36,249
Poles and piling	20,931	8,146	7,495	11,967	17,145
Round mining timber	3,033	2,568	2,137	1,881	1,463
Fence posts	2,645	2,370	2,956	3,385	3,368
Hewn ties	664	317	235	160	36
Fence rails	327	276	268	253	255
Wood for charcoal	502	460	448	430	494
Miscellaneous roundwood	103	804	1,515	1,630	6,497
Other products	8,732	7,665	9,474	7,047	6,849
Totals	823,054	638,611	715,716	806,488	846,035

¹ Includes transportation costs; see text above.

9.—Volume and Value of Wood Cut in Woods Operations, 1952-61 and by Product 1961

Year	Wood Cut		Year and Product	Wood Cut		
	Equivalent Volume of Merchantable Wood ¹	Total Value		Quantity Reported or Estimated	Equivalent Volume of Merchantable Wood ¹	Total Value ²
	M cu. ft.	\$'000			M cu. ft.	\$'000
			1961			
1952.....	3,205,383	763,189	Logs and bolts.....M ft.b.m.	8,800,339	1,684,991	404,016
1953.....	3,078,066	704,539	Pulpwood..... cord	15,474,266	1,315,314	369,663
1954.....	3,122,313	728,370	Fuelwood..... "	2,993,845	239,508	36,249
1955.....	3,280,070	829,573	Poles and piling..... No.	1,654,709	24,820	17,145
1956.....	3,463,304	939,143	Round mining timber..... cord	77,394	6,578	1,463
1957.....	3,172,166	823,054	Fence posts..... No.	10,453,678	12,545	3,368
1958.....	2,854,670	638,611	Hewn ties..... "	27,205	136	36
1959.....	3,186,387	715,716	Fence rails..... "	769,345	770	255
1960.....	3,431,465	806,488	Wood for charcoal..... cord	38,750	3,100	494
1961.....	3,303,289	846,035 ²	Miscellaneous roundwood.....cu.ft.	...	15,527	6,497
			Other products ³.....	...	...	6,849
			Totals, 1961.....	...	3,303,289	846,035

¹ In estimating the annual drain on Canada's forest resources, certain converting factors have been used, each of which represents in cubic feet the quantity of merchantable wood used to produce one unit of the material in question. The factor for logs and bolts for the British Columbia coastal region is 175 and for the remainder of Canada 200. Other factors: pulpwood and round mining timber 85, fuelwood and wood for charcoal 80, poles and ng 15, hewn railway ties 5, fence posts 1.2 and fence rails 1. ² Includes transportation costs; see text on p. 510. ³ Chiefly Christmas trees but also includes balsam gum, cascara bark, etc.

10.—Equivalent Volume of Solid Wood Cut and Value of Products of Woods Operations, by Province, 1959-61

Province or Territory	Equivalent Volume of Solid Wood			Value of Products ¹		
	1959	1960	1961	1959	1960	1961 ²
	M cu. ft.	M cu. ft.	M cu. ft.	\$'000	\$'000	\$'000
Newfoundland.....	96,695	126,702	98,014	22,771	32,194	25,961
Prince Edward Island..	10,594	10,834	10,157	1,430	1,546	1,637
Nova Scotia.....	89,612	98,095	96,747	18,441	20,024	19,777
New Brunswick.....	172,602	187,297	193,346	33,060	40,716	44,097
Quebec.....	877,158	879,914	914,096	215,287	212,620	239,529
Ontario.....	531,528	541,329	494,048	131,940	154,473	148,434
Manitoba.....	51,766	45,255	37,602	7,948	7,382	6,264
Saskatchewan.....	44,621	49,860	44,036	6,363	7,419	6,580
Alberta.....	135,003	148,485	118,390	20,274	24,049	22,362
British Columbia.....	1,173,965	1,337,997	1,295,038	257,650	304,978	331,174
Yukon and N.W.T.....	2,843	5,697	1,815	552	1,087	220
Canada.....	3,186,387	3,431,465	3,303,289	715,716	806,488	846,035

Includes value of forest products other than wood.

² Includes transportation costs; see text on p. 510.

11.—Principal Statistics of Woods Operations, 1955-61

Year	Employees (man- years) ¹	Salaries and Wages	Cost of Materials	Net Value of Production	Gross Value of Production
	No.	\$'000	\$'000	\$'000	\$'000
1955.....	149,000	506,000	100,459	729,114	829,573
1956.....	132,015	472,035	97,808	841,334	939,143
1957.....	119,944	430,805	89,942	733,113	823,054
1958.....	67,327	338,284	68,595	570,016	638,611
1959.....	82,551	347,406	57,004	658,712	715,716
1960.....	86,539	374,731	72,923	733,566	806,488
1961.....	94,681	422,374	137,576	708,459	846,035

¹ Prior to 1958, employment statistics included those individuals employed in the transportation of product from the woods to the manufacturing plant or user. In order to report only employment in woods operations, and to avoid duplication of data collected elsewhere, employment statistics for 1958-60 were compiled to conform with this principle. In 1961, employees engaged in transportation costs were included. ² Includes transportation costs; see text on p. 510.

Subsection 2.—Sawmills and Shingle Mills

The sawmill and shingle mill industry includes sawmills, tie, shingle, lath, stave heading and hoopmills. In 1961, reports were compiled from 3,260 establishments. Many small mills previously included, which together produce less than 1 p.c. of the total, were excluded in the latest year as a result of the implementation of the revised Standard Industrial Classification. Also, beginning with 1961, in keeping with the conceptual approach in other industries, the formerly reported "value of products" was changed to "value of shipments and work done". The change affected mainly custom sawing; previously the lumber produced by custom sawing was actually valued but under the new approach only the value of work done, which is considerably lower, was taken into account. This difference should be noted when comparing 1961 figures with those for previous years.

Because of lack of comparable data, production and value figures for lumber and a sawmill products are given in Tables 12 and 13 for 1961 only. Principal statistics of the industry, given in Table 14, have been adjusted on a comparable basis back to 1957.

12.—Quantity and Value of Lumber Shipments and Value of Shipments of All Sawmill Products (Sawmill and Shingle Mill Industry only), by Province, 1961

Province or Territory	Lumber Shipments		Value of Shipments of All Sawmill Products and By- products (incl. shingle mills)
	Quantity	Value	
	M ft. b.m.	\$'000	\$'000
Newfoundland.....	22,112	1,530	1,766
Prince Edward Island.....	3,605	225	331
Nova Scotia.....	139,671	8,979	11,566
New Brunswick.....	239,853	16,596	20,796
Quebec.....	795,121	58,464	69,031
Ontario.....	523,600	42,994	51,531
Manitoba.....	19,890	986	1,281
Saskatchewan.....	8,291	460	1,321
Alberta.....	99,553	4,994	7,831
British Columbia.....	5,239,537	314,471	384,961
Yukon and Northwest Territories.....	5,961	476	471
Canada.....	7,097,194	450,177	550,911

¹ Includes 2,290,286 squares of shingles valued at \$20,122,623 and 120,960,000 laths at \$1,422,980.

13.—Quantity and Value of Lumber Shipments, by Species, 1961

Kind of Wood	Quantity	Value
	M ft. b.m.	\$'000
Spruce.....	2,080,517	121,728
Douglas fir.....	1,992,327	124,166
Fernlock.....	1,314,552	77,682
White pine.....	286,792	25,249
Cedar.....	544,414	38,183
Yellow birch.....	129,426	14,064
Black pine.....	205,058	12,473
Maple.....	91,131	9,020
Balsam fir.....	112,320	7,011
Red pine.....	24,794	2,181
Other.....	315,863	18,420
Totals.....	7,097,194	450,177

14.—Principal Statistics of the Sawmill Industry, 1957-61

Year	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Gross Value of Shipments	Value Added by Manufacture
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
57.....	4,490	46,044	134,014	7,947	268,363	484,270	207,940
58.....	4,004	43,484	134,346	8,762	262,455	480,674	209,454
59.....	4,003	45,128	138,456	9,337	275,115	508,100	223,649
60.....	3,719	43,886	145,450	9,501	295,823	530,187	224,857
61.....	3,260	41,134	144,700	11,380	306,238	534,591	218,228

Exports.—Exports of lumber, shingles and shakes, and other sawmill products are given in Chapter XX on Foreign Trade, Part II, Table 11.

Subsection 3.—The Pulp and Paper Industry

The manufacture of pulp and paper has been the leading industry in Canada for many years and the postwar development of the industry has more than kept pace with the industrial growth of the nation. Pulp and paper stands first among all industries in the value of shipments, in exports, in total wages paid and in capital invested. It is the largest consumer of electric energy and the largest industrial buyer of goods and services, including transportation, in the land. The industry has a newsprint output more than five times that of any other country and provides about 42 p.c. of the world's newsprint needs.

There are three classes of mills in the industry. In 1961, 30 were making pulp only, 2 were making paper only and 71 were combined pulp and paper mills.

The industry includes several forms of industrial activity: operations in the woods with pulpwood as a product, the manufacture of pulp and paper of all kinds, and the manufacture of paperboards. Some of the important pulp companies operate sawmills to utilize the larger timber on their limits to the best advantage, and some lumber manufacturers divert a portion of their spruce and balsam logs to pulp mills. Only a small percentage of the pulpwood cut in Canada is exported in raw or unmanufactured form.

15.—Production, Consumption, Exports and Imports of Pulpwood, 1952-61

Year	Production of Pulpwood in Canada ¹			Canadian Pulpwood Used in Canadian Mills ¹	Canadian Pulpwood Exported Unmanufactured	Imported Pulpwood Used in Canada
	Quantity	Value	Average Value per Cord			
	cords	\$	\$	cords	cords	cords
1952.....	14,755,089	346,802,085	23.50	11,960,014	2,529,353	31,06
1953.....	13,545,181	309,011,150	22.81	12,060,853	1,783,657	48,80
1954.....	14,739,571	323,800,478	21.97	12,875,978	1,826,193	105,02
1955.....	16,087,951	369,476,288	22.97	13,494,496	1,882,784	134,91
1956.....	17,469,334	419,470,968	24.01	13,843,711	1,953,470	188,14
1957.....	14,967,604	340,235,102	22.73	13,187,474	1,800,411	179,61
1958.....	12,759,136	275,153,906	21.57	12,477,330	1,286,314	146,82
1959.....	14,357,139	320,244,307	22.31	13,387,285	1,107,486	147,70
1960.....	13,997,080	311,579,147	22.26	13,888,347	1,151,899	227,64
1961.....	15,474,266	369,663,000	23.89	14,230,730	1,151,471	206,77

¹ Given in terms of rough or unpeeled wood.

Pulp Production.—The manufacture of pulp, the second stage in this industry is carried on by mills producing pulp only and also by paper manufacturers operating pulp mills in conjunction with paper mills to provide their own raw material. Such mills usually manufacture a surplus of pulp for sale in Canada or for export. Spruce supplemented by balsam fir in the east and by hemlock in the west, is the most suitable species for the production of all but the best types of paper.

The preliminary preparation of pulpwood is most commonly carried on at the pulp mill although there are a number of rossing mills operating on an independent basis chiefly for the purpose of saving freight on material cut at a distance from the mill or material intended for export. Pulpwood is commonly measured by the cord (4' by 4' by 8' of piled material). One cord of rough pulpwood contains approximately 85 cu. ft. of solid wood, and one cord of peeled pulpwood 95 cu. ft.

The manufacture of 11,779,165 tons of pulp produced in 1961 entailed the use of 14,437,456 cords of rough pulpwood valued at \$365,330,191 and the equivalent of 2,102,500 cords of other wood (i.e., sawmill chips, slabs and edgings, sawdust, butts, etc.) valued at \$36,181,817. The total value of materials used in the manufacture of pulp was \$492,902,883.

16.—Pulp Production, Mechanical and Chemical, 1952-61

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Mechanical Pulp		Chemical Fibre		Total Production ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	5,175,319	217,352,245	3,518,127	423,789,033	8,968,009	650,021,1
1953.....	5,122,597	209,899,639	3,663,289	406,114,975	9,077,063	624,865,5
1954.....	5,337,610	214,102,066	4,057,046	433,359,934	9,673,016	655,916,7
1955.....	5,466,925	218,557,773	4,359,226	465,149,732	10,150,547	693,402,5
1956.....	5,723,002	231,236,271	4,645,493	463,880,858	10,733,744	706,232,5
1957.....	5,574,233	227,668,164	4,526,667	468,067,374	10,425,295	706,194,6
1958.....	5,375,499	222,295,717	4,445,310	471,590,838	10,137,454	703,365,5
1959.....	5,655,701	229,655,697	4,837,328	504,613,400	10,832,200	744,940,4
1960.....	5,880,529	237,344,741	5,203,799	522,539,122	11,461,439	772,626,0
1961.....	5,878,322	237,598,007	5,560,336	547,565,114	11,779,165	796,290,7

¹ Includes screenings and unspecified pulps.

17.—Pulp Production, by the Chief Producing Provinces, 1952-61

Year	Quebec		Ontario		Canada ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	4,192,047	280,314,341	2,308,722	182,773,000	8,968,009	650,021,180
1953.....	4,163,068	265,937,385	2,323,509	177,713,471	9,077,063	624,865,504
1954.....	4,315,465	268,759,418	2,420,903	183,381,040	9,673,016	655,916,738
1955.....	4,491,139	280,171,743	2,602,298	196,235,632	10,150,547	693,402,831
1956.....	4,809,011	296,884,619	2,735,241	178,012,929	10,733,744	706,232,534
1957.....	4,605,853	286,727,250	2,746,177	207,305,585	10,425,295	706,194,649
1958.....	4,223,227	256,238,044	2,736,456	217,476,915	10,137,454	703,365,594
1959.....	4,374,156	263,463,635	2,753,176	213,333,340	10,832,200	744,940,432
1960.....	4,469,015	267,664,950	2,966,587	223,108,348	11,461,489	772,626,099
1961.....	4,578,084	272,035,683	2,980,582	219,456,649	11,779,165	796,290,768

¹ Includes production in other provinces; Prince Edward Island is now the only province in which there is no production.

Pulp Exports.—The main market for Canadian pulp is the United States. For many years this market alone has absorbed between 75 and 90 p.c. of such exports.

18.—Exports of Pulp to Britain, United States and All Countries, 1952-61

Year	Britain		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	210,685	35,208,295	1,588,978	225,082,376	1,940,579	291,863,498
1953.....	214,951	28,099,255	1,599,491	202,247,663	1,950,152	248,674,880
1954.....	270,946	34,486,399	1,669,782	206,435,403	2,180,416	271,418,005
1955.....	280,575	34,814,098	1,868,804	233,796,779	2,366,133	297,304,069
1956.....	244,164	29,762,920	1,919,634	245,080,531	2,374,013	304,536,497
1957.....	225,482	28,662,202	1,847,364	235,258,142	2,282,656	292,406,102
1958.....	216,147	24,666,398	1,832,521	239,874,495	2,219,314	285,448,649
1959.....	217,386	24,726,915	1,966,480	254,049,124	2,450,027	311,252,798
1960.....	282,747	32,203,019	1,999,755	256,170,127	2,601,457	325,121,572
1961.....	278,846	31,022,948	2,176,585	268,949,199	2,868,844	346,660,713

World Pulp Statistics.—Figures of production, exports and imports of pulp for certain countries of the world are shown for 1960 and 1961 in Table 19. It is estimated that these countries produce over three quarters of the world supply of pulp.

19.—Production, Exports and Imports of Pulp, by Leading Countries, 1960 and 1961

(SOURCE: Canadian Pulp and Paper Association)

Country	1960			1961		
	Production ^a	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada ¹	11,457	2,601	64	11,830	2,867	62
United States.....	25,310	1,142	2,381	26,465	1,178	2,468
Finland.....	4,076	1,757	4	4,735	1,764	6
Norway.....	1,678	888	50	1,690	836	37
Sweden.....	5,454	3,230	10	5,706	3,010	5

^a Production figures differ slightly from DBS figures given in Table 16, because of a different basis of calculation.

Paper Production.—During 1961 there were 95 establishments producing paper and paperboard in Canada. In addition to newsprint, Canadian mills have a highly developed production of fine paper, wrapping paper, tissues, paperboard and other cellulose products.

20.—Paper Production, by Type, 1952-61

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Newsprint Paper		Book and Writing Paper		Wrapping Paper	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	5,707,030	600,515,960	224,683	57,463,621	222,529	45,356,720
1953.....	5,755,471	633,408,019	246,513	61,451,545	238,111	49,028,911
1954.....	6,000,895	657,487,344	269,353	68,613,807	250,408	51,341,374
1955.....	6,196,319	688,338,369	301,352	74,904,349	263,915	53,998,859
1956.....	6,445,110	735,644,049	341,580	86,524,107	288,146	61,098,013
1957.....	6,361,651	729,009,081	335,037	86,990,136	277,208	60,402,276
1958.....	6,030,930	699,906,388	344,622	91,079,353	292,727	64,650,624
1959.....	6,351,112	730,455,460	381,779	101,927,846	330,189	71,318,172
1960.....	6,688,834	783,364,089	403,668	106,573,848	321,166	70,778,384
1961.....	6,718,396	809,602,323	419,612	112,594,587	326,974	71,427,264
	Paperboard		Tissue and Miscellaneous Paper		Totals	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	874,582	106,066,622	172,976	28,702,185	7,201,800	838,105,108
1953.....	948,955	114,978,277	187,476	28,991,721	7,376,526	887,858,473
1954.....	940,196	117,172,691	188,755	30,975,427	7,649,607	925,590,643
1955.....	1,027,441	130,365,751	211,186	33,831,919	8,000,213	981,439,247
1956.....	1,173,087	147,967,340	218,862	39,258,846	8,466,785	1,070,492,355
1957.....	1,114,726	143,079,419	211,267	36,890,420	8,299,889	1,056,371,332
1958.....	1,188,650	152,810,753	224,364	36,193,082	8,081,293	1,044,640,200
1959.....	1,255,692	163,151,023	231,087	39,218,605	8,549,859	1,106,071,106
1960.....	1,277,554	165,800,650	231,564	40,523,441	8,922,786	1,167,040,412
1961.....	1,066,269	154,087,870	237,663	42,082,049	8,768,914	1,189,794,093

Quebec produced almost 43 p.c. of the total paper made in 1961, Ontario over 30 p.c. British Columbia about 13 p.c. and Newfoundland, Nova Scotia, New Brunswick Manitoba, Saskatchewan and Alberta the remainder.

21.—Paper Production, by Province, 1960 and 1961

Province	1960		1961	
	Quantity	Value	Quantity	Value
	tons	\$	tons	\$
Quebec.....	3,905,972	501,596,562	3,853,522	508,988,755
Ontario.....	2,550,109	364,448,004	2,491,450	364,394,838
British Columbia.....	1,150,119	140,000,169	1,135,673	153,627,085
Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta.....	1,316,586	160,995,677	1,288,269	162,783,315
Totals.....	8,922,786	1,167,040,412	8,768,914	1,189,794,093

Newsprint Exports.—Total exports of newsprint from Canada in the years 1952-61 are given in Table 22.

22.—Exports of Newsprint to Britain, United States and All Countries, 1952-61

Year	Britain		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1952.....	131,005	14,575,722	4,850,962	534,372,859	5,327,430	591,790,209
1953.....	158,108	18,237,016	4,917,216	564,464,267	5,375,251	619,033,394
1954.....	250,185	28,639,166	4,866,649	558,633,675	5,521,530	635,669,692
1955.....	286,343	33,013,180	5,027,767	578,322,418	5,763,167	665,876,987
1956.....	347,905	41,531,514	5,218,911	615,941,551	5,967,194	708,384,822
1957.....	371,870	44,009,073	5,058,229	610,290,208	5,900,625	715,489,761
1958.....	389,000	46,476,034	4,880,985	590,167,442	5,682,832	680,209,468
1959.....	393,942	51,585,851	5,091,770	614,706,362	5,910,173	722,271,166
1960.....	460,537	60,162,971	5,229,909	631,230,363	6,190,286	757,930,406
1961.....	456,962	59,293,740	5,228,156	629,791,521	6,253,717	761,312,790

World Newsprint Statistics.—Since 1913 Canada has led the world in the export of newsprint. Figures for the leading producing countries for the two latest years available are given in Table 23; 1939 figures are included for comparative purposes. The six countries listed accounted for 73 p.c. of the estimated world production in 1961, Canada contributing about 42 p.c.

23.—Estimated World Newsprint Production and Exports, by Leading Countries, 1939, 1960 and 1961

(SOURCE: Newsprint Association of Canada)

Country	Production			Exports		
	1939	1960	1961	1939	1960	1961
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada.....	3,175	6,738	6,733	2,935	6,189	6,252
United States.....	939	2,009	2,074	13	134	182
Britain.....	848	830	797	42	52	31
Finland.....	550	861	1,041	433	761	932
Sweden.....	306	641	682	199	434	466
Norway.....	222	249	248	188	195	210

¹ Figures differ slightly from DBS figures given in Tables 20 and 22, because of different bases of calculation.

Statistics of the Combined Pulp and Paper Industries.*—The manufacture of pulp, the manufacture of paper and the manufacture of products made of paper may, under certain conditions, be treated as three industries for they are frequently carried on at separate plants by entirely independent companies. The manufacture of basic stock and the converting of this paper into stationery and other highly processed paper products are often combined in one plant. This conversion of paper within the pulp and paper industry represents only a small part of Canada's production of converted paper and boards, the bulk of which is still made in special converting mills classified in other industrial groups.

The presence of these different combinations in one mill makes it difficult to separate any of the statistics relating to the manufacture of pulp, basic paper and converted paper products. All converting operations carried on in paper mills in this industry are attributed to the particular industrial group of converting plants to which they properly belong. Including manufacturing operations as far as the basic paper-making stage, there

* See Chapter XIV for further particulars regarding the pulp and paper and paper-converting industries.

were altogether 125 mills in operation in 1961. Employees numbered 65,799 and their salaries and wages amounted to \$355,171,060, as against 65,642 employees earning \$344,409,846 in 1960. If the pulp made for their own use in combined pulp and paper mills is disregarded, the total value of materials and supplies used in the industry as a whole amounted to \$680,167,806 in 1961 compared with \$656,877,464 in 1960; the selling value of factory shipments to \$1,634,606,001 in 1961 and \$1,578,727,108 in 1960; and value added by manufacture to \$842,419,885 in 1961 and \$811,546,844 in 1960.

In world trade, pulp and paper are generally Canada's main commodities—newsprint alone, over a considerable period, has brought Canada more export dollars than wheat, nickel or any other single commodity.* The United States market absorbs annually over 80 p.c. of all pulpwood exports and the same percentage of the pulp and the paper shipments of Canada.

Subsection 4.—The Veneer and Plywood Industries

The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces. Changes in manufacturing methods applied to hardwood plywood resulted in its adaptation to many uses, particularly to interior wall finishes for homes and other buildings.

Softwood veneer and plywood are produced almost entirely in British Columbia. Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. The use of synthetic resin adhesives is responsible for this product, which has become almost indispensable to the construction industry—for wall panels, concrete forms, roofing, sheeting and house sub-floors; for construction of silos, cribs and caissons; for box-car linings, bus bodies, trailers, and watercraft; for box panels and crate linings, case goods and core-stock for furniture; and for plywood-faced doors and many other items. The heating of glued veneers in moulds by high-frequency electric fields (dielectric heating) permits the manufacture of shaped plywood which is now widely used in the manufacture of furniture.

Veneers of Canadian manufacture are not confined to species native to Canada. A number of imported woods of special decorative value are veneered successfully and provide the furniture industry with a wide choice of materials. Exports of veneer and plywood produced in Canada increased in value from \$969,256 in 1938 to a high of \$34,191,000 in 1961.

* For reasons given in Section 1, Part II of the Foreign Trade Chapter, gold is excluded from Canadian trade statistics.

24.—Veneer and Plywood Produced for Sale, by Type, 1959-61

Type	1959 ¹		1960 ¹		1961	
	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch
Veneer.....M sq. ft.	745,547	514,311	641,331	450,780	641,590	456,549
\$	21,471,254	5,321,477	19,117,025	5,031,856	18,469,432	5,213,141
Softwood.....M sq. ft.	6,779	444,526	8,254	381,024	7,745	374,159
\$	89,380	3,517,631	110,526	3,088,996	107,960	3,095,698
Hardwood.....M sq. ft.	691,297	68,111	614,835	64,587	633,845	82,390
\$	19,788,928	1,740,960	18,336,070	1,705,876	18,361,472	2,117,443
Plywood (1/4 inch basis).M sq. ft.	1,532,175		1,638,914		1,902,806	
\$	101,346,523		98,485,813		105,615,894	
Softwood.....M sq. ft.	1,231,339		1,331,575		1,628,386	
\$	71,287,508		71,828,995		79,036,585	
Hardwood.....M sq. ft.	276,298		237,092		274,420	
\$	25,075,147		22,117,225		26,579,309	

¹ Imports included in totals only.

Subsection 5.—Other Wood Industries

Based on the revised Standard Industrial Classification, which was introduced in 1960, there are nine separate wood industries other than the sawmills and the veneer and plywood mills. Most of these industries obtain from the sawmills the wood which they transform into planed or matched lumber, doors, windows, laminated structures, prefabricated buildings, boxes, barrels, caskets, etc. Veneer and plywood are also important raw materials used.

The wood industries do not include every industry into which wood enters as a raw material. Wood is an important raw material in the manufacture of furniture, agricultural implements, musical instruments, etc., industries which, as proven by experience, are more correctly classified under other groups.

As shown in Table 25, factory shipments of the establishments classed in the wood industries—except sawmills and veneer and plywood mills—were valued at \$340,705,629 in 1961, an amount 5.4 p.c. above that of the previous year. Compared with 1960, the value of factory shipments climbed substantially for the sash, door and planing mills industry and a moderate increase also materialized in the hardwood flooring industry. These two industries are closely dependent upon the residential construction activity which was significantly improved in 1961; compared with the preceding year there was slight decline in the number of dwellings completed, but this was more than counterbalanced by the increase in new starts which numbered 125,577 for the year, 15.4 p.c. higher than in 1960. Average yearly employment in the Other Wood Industries group is reported at 26,403, with a payroll at \$87,079,304 compared with 26,423 and \$84,902,014, respectively, in the preceding year.

25.—Value of Shipments of Other Wood Industries, 1959-61

Industry	1959 ¹	1960 ¹	1961	Percentage Change 1960-61
	\$	\$	\$	
Sash, door and planing mills.....	235,525,672	212,831,899	235,160,488	+10.5
Wooden box factories.....	23,742,909	24,049,753	22,324,470	- 7.2
Hardwood flooring.....	16,086,505	13,833,208	13,997,256	+ 1.2
Fin and casket industry.....	11,056,110	11,599,334	11,738,038	+ 1.2
Wood handles and turning.....	9,591,274	10,184,044	9,232,783	- 9.4
Percentage.....	5,647,303	5,258,997	5,207,005	- 1.0
Woodware.....	3,554,543	3,596,505	3,537,440	- 1.6
Other.....	45,174,254	41,874,075	39,508,149	- 5.7
Totals.....	350,378,570	323,227,815	340,705,629	+ 5.4

¹ BASIS: Revised Standard Industrial Classification (1960) and New Establishment Concept (1961).
Includes wood preservation industry and miscellaneous wood industries.

² Includes

Subsection 6.—The Paper-Using Industries

Starting with 1960, the paper-using group is comprised of five industries* engaged primarily in manufacturing commodities of paper and paperboard. Establishments engaged in printing, publishing, bookbinding and the allied graphic arts also consume large quantities of these materials but are grouped separately (see Subsection 7).

Some paper-using establishments purchase paper as a raw material from the pulp and paper industry and merely subject it to some form of treatment to fit it for further manufacture in another industry; this occurs in the manufacture of coated, sensitized or corrugated paper. Other firms purchase paper and subject it to treatment to fit it for a definite final use such as in the manufacture of asphalt roofing or waxed wrapping paper. Another large group uses paper and paperboard as a raw material for conversion into paper bags, boxes, envelopes and other commodities.

* Asphalt roofing manufacturers, folding box and set-up box manufacturers, corrugated box manufacturers, bag manufacturers, and miscellaneous paper converters.

The manufacture of containers and packages of various kinds has grown very rapidly since ways have been found of converting tough and cheap paper stocks into strongly made boxes which are replacing wooden crates and packing cases. Small attractive paper containers for use in the retail trade are now in common use and their manufacture constitutes an important branch of the paper-using industries. Starting with 1960, a number of establishments specializing in the production of plastic bags (cellulose, polyethylene, etc.) previously classed in other industries, are included with the paper bag manufacturers.

Composition roofing and sheathing, consisting of paper felt saturated with asphalt tar and in some cases coated with a mineral surfacing, is being increasingly used as a substitute for metal roofing, wooden shingles and siding materials. Establishments classed as roofing manufacturers also produce a large proportion of the floor tiles manufactured in this country.

As a whole, the paper using industries have grown considerably in recent years. The same trend generally applied in 1961 compared with the preceding year; except for a small decline in the reported number of employees, statistics show a satisfactory increase. Shipments climbed to \$571,128,054 from \$542,785,569 in 1960; earnings were up \$115,966,105 from \$113,130,561, despite a decline in the number of employees to 29,000 from 29,509; and plants numbered 444 compared with 439.

Subsection 7.—Printing, Publishing and Allied Industries

The printing, publishing and allied industries group is made up of six closely related industries: printing and bookbinding, including commercial printers and bookbinders; lithographing, comprised of commercial printing plants using principally the offset printing process; engraving, stereotyping and electrotyping, including photo-engraving; trade composition or type setting for printers; printing and publishing, comprised of publishers who operate printing plants; and "publishers only", including establishments primarily engaged in publishing and which do no printing.

The total revenue of all establishments in this group of industries reached \$871,902,400 in 1961, an amount 3.1 p.c. higher than the 1960 total of \$845,946,370. The payroll went up to \$327,880,120 from \$320,280,912 despite a small decline in the reported number of employees to 72,770 from 73,049; the plants numbered 3,427 compared with 3,410 in the preceding year.

The revenue to commercial printing establishments (including lithographers) rose to \$370,472,076 in 1961 from \$357,601,668 in 1960; plants specializing in trade composition, engraving, stereotyping, etc., had a total revenue of \$52,074,200 compared with \$51,800,680 in 1960. The revenue to the printing and publishing industry increased to \$370,327,715 from \$358,524,761 and for "publishers only" to \$79,028,459 from \$78,019,253. Revenues from advertising and from subscriptions or sales of Canadian newspapers and periodicals of all kinds rose to \$398,736,452 in 1961 from \$391,946,462 in 1960; advertising revenues were \$298,677,860 compared with \$294,883,240 and sales \$100,058,592 compared with \$97,063,222.

CHAPTER XI.—MINES AND MINERALS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Canada's Mineral Industry 1961-62*

Following the 1950-61 period of comparatively slow production growth, the Canadian mineral industry recorded a favourable gain in output to \$2,842,984,195 in 1962 from the 1961 level of \$2,582,300,387. The mineral fuels sector accounted for about one half of the year's gain in production value and the metallic minerals for one third. The structural materials component of the industrial minerals sector accounted for most of the remaining gain, the increase for the non-metallic minerals being comparatively minor. As a result of these advances, production values of metallic minerals, industrial minerals and mineral fuels were \$1,480,282,362, \$565,850,747 and \$796,851,086, respectively, compared with \$1,387,159,036, \$541,813,549 and \$653,327,802 in 1961. A considerable decline in the production value of uranium and smaller declines for several other minerals were more than offset by major gains for crude petroleum, nickel, natural gas and copper.

The extent of mineral industry growth in recent years is readily apparent from a comparison of key statistics for 1952 and 1962; in the earlier year, production value was \$285,342,353, less than one half the 1962 output. The index of physical volume of mineral production, on a 1949 base, rose from 131.0 to 287.0 and per capita output from \$9 to \$153. Although the rate of production growth was greatest in the earlier years of this period, exploration and property development, particularly in the metallic minerals sector, have proceeded at a rapid pace during the past two years. This activity has demonstrated further the great mineral potential of Canada.

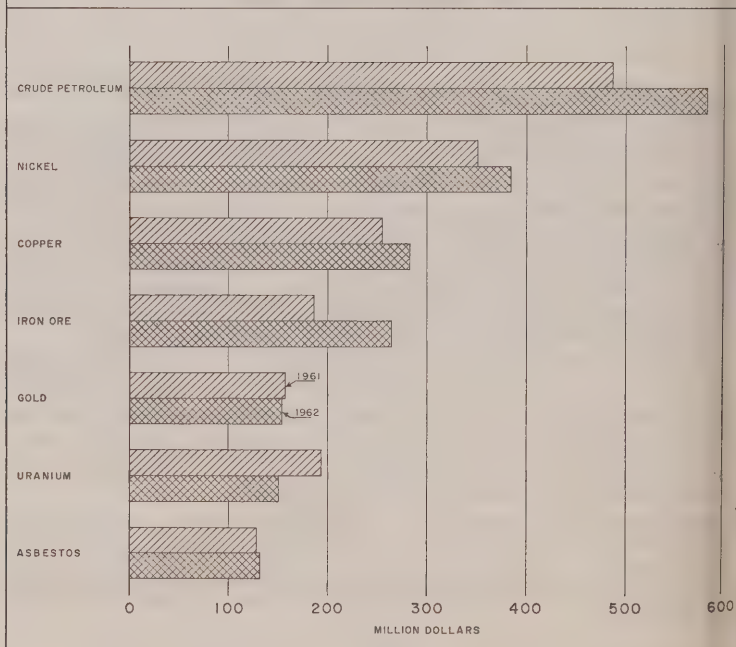
Nickel, for the fourth consecutive year, was the leading metal in 1962 with a value of \$385,200,000, although the volume of output was down slightly. Following nickel

* Prepared under the direction of Dr. W. E. van Steenburgh, Deputy Minister of Mines and Technical Surveys, Ottawa, in the following Divisions: Introduction and Subsections 1 and 3 by the Mineral Resources Division; Subsection 2 by the Mineral Processing Division, Mines Branch; and Subsection 4 by the Fuels and Mining Practice Division, Mines Branch.

in output value were copper, iron ore, gold, uranium, zinc, lead and silver, in that order. These eight metals accounted for 96 p.c. of the value of metallic minerals output and 50 p.c. of the total value of mineral production. Compared with 1961, there were declines in uranium, gold and lead production, with uranium dropping from third to fifth place among the metals. The most outstanding gain was in iron ore production which advanced to \$264,600,000 from \$187,900,000 and to third place in value. Copper, with a value of \$283,100,000, retained second place.

The Thompson nickel project in northern Manitoba had its first full year of production in 1962 and two new nickel operations—one in Quebec and one in northwestern Ontario began initial production during the year. Canada produces almost two thirds of the world's nickel. It is the fifth largest copper producer, following the United States, Northern Rhodesia, Chile and the Soviet Union. Canadian mine output of copper reached an all-time high in 1962. Refined copper production was down slightly from 1961 because of increased exports in the form of concentrates but over four fifths of mine output was refined in Canada. The copper industry has been particularly active in recent years and in 1962 eight mines started production and seven were being developed while exploration parties were active in all copper-producing provinces and in the territories.

VALUE OF CANADA'S SEVEN LEADING MINERALS,
1962 COMPARED WITH 1961



The iron ore industry was one of the most buoyant parts of the mineral economy in 1962. Quebec-Labrador producers, integrated with United States steel companies, were able to increase considerably their shipments to the United States and, as a result, total exports to that market advanced by 80 p.c. British Columbia mine development benefited from growth in shipments to Japan but this gain was more than offset by the weaker competitive position of Eastern Canada producers in Britain and other European markets. One of the most significant resource developments of 1962 was the commencement of iron ore shipments, in the form of high-grade concentrate, by Iron Ore Company of Canada from its new operation at Labrador City.

Canada is the world's third largest gold producer, after the Republic of South Africa and the Soviet Union. Despite the increase in the Royal Canadian Mint price for gold to \$37.41 an oz.t. from the 1961 price of \$35.46, Canada's output declined by 7 p.c. Increasing mining depths, lower grade ores, higher labour and material costs and lower mine tonnages are all working toward higher operating costs in the gold industry.

The uranium industry continued to make adjustments under a stretch-out plan for deliveries to the United States as instituted by the Federal Government late in 1959. At the end of 1962, eight mines were in production compared with 23 at the peak period in 1959. The value of production in that year was \$331,000,000, subsequently declining to \$270,000,000, \$195,700,000 and \$151,000,000 in 1960, 1961 and 1962, respectively. Although lead production declined, zinc producers increased their shipments and the capacity of the zinc industry will be enlarged considerably over the next four to five years. New mines in Quebec accounted for a large part of the 1962 increase. Silver production dropped about 5 p.c. as a result of the decline in British Columbia lead production from which silver is derived as a by-product.

In the industrial minerals sector, a new production record was established for the fourth consecutive year and individual highs were recorded for magnesium minerals, nepheline syenite, salt, elemental sulphur and cement. The most notable development was the establishment of potash production on a regular basis after several years of delays with mining problems. Elemental sulphur production from natural gas fields in Western Canada also shows much promise and in 1962 shipments exceeded half a million tons for the first time. By the end of 1963, the Canadian potash industry should be capable of supplying 15 p.c. of the world market; the elemental sulphur industry achieved this status in 1962. Elsewhere in the industrial minerals sector, salt mining capacity was being enlarged, gypsum production facilities increased for shipments to the United States market, and cement processing and distribution facilities expanded. Major engineering projects, such as the large hydro-electric power development north of Baie Comeau in Quebec, contributed to the high level of activity in the construction industry in 1962 and the resultant demand for cement and other construction materials.

The leading commodity in the industrial minerals group is asbestos, followed by sand and gravel, and cement. With a value of \$132,100,000 in 1962, asbestos accounted for 61 p.c. of the total value of the 26 non-metals produced, and sand and gravel and cement accounted for 66 p.c. of the value of structural materials. In recent years, structural materials have been accounting for about three fifths of the value of industrial minerals production, and non-metals for about two fifths.

In the fuels sector, with over one quarter of Canada's total mineral value, crude petroleum accounted for almost three quarters of the 1962 fuels output. Petroleum has been the leading mineral in point of value since 1953 and in 1962 it exceeded nickel, in second place, by almost \$200,000,000. Output of all liquid hydrocarbons in 1962 averaged 34,000 bbl. daily and during the early months of 1963, production exceeded 800,000 bbl. daily. Natural gas production increased by a record amount as a result of the first full year's operation of the Alberta-to-California pipeline and a favourable demand growth in the domestic market. Alberta accounted for four fifths of Canada's production. The search for oil and gas continued and renewed interest was shown in opening up the Athabasca oil sands for large-scale production as a number of oil companies proceeded actively with various plans to improve mining and processing techniques.

Canada's petroleum refining capacity in 1962 was 979,660 bbl. a day, more than double the 1952 rate. Quebec and Ontario had almost 60 p.c. of this capacity. Domestic oil accounted for almost 56 p.c. of all crude used in Canadian refineries in 1962 even though all refineries in Quebec and the Maritime Provinces run entirely on imported crude. There were 74 natural gas processing plants in Canada with a capacity of 3,400,000 Mcf. daily.

Export trade is of vital importance to the Canadian mineral industry. The value of mineral exports as raw materials and semi-processed products in 1962 was \$1,935,433,000. The leading export commodities were nickel, the mineral fuels, aluminum and iron ore which accounted for 16.7 p.c., 16.2 p.c., 14.9 p.c. and 14.7 p.c., respectively, of all mineral exports. About three quarters of the production value of the metallic minerals is accounted for by exports; for the mineral fuels and for industrial minerals the proportion is one quarter. Notwithstanding conditions of mineral over-supply in the world, there was a \$177,000,000 increase in Canada's mineral exports in 1962, representing a 10-p.c. gain over 1961. Although the Canadian mineral industry must face such restrictions in international trade as quotas and tariffs, the increasing need for mineral materials in the industrial nations of the world offers much promise for continuing growth and diversification of the Canadian mineral economy.

Subsection 1.—Metals

Nickel.—Production of nickel in Canada in 1962 amounted to 232,068 tons valued at \$385,224,707. The quantity was slightly under the 1961 production but the production value was considerably higher. Ontario produced 165,440 tons valued at \$274,492,739 and Manitoba produced 62,099 tons valued at \$103,169,771. The aggregate production from Quebec, British Columbia and the Northwest Territories was 4,528 tons. Marketing was characterized by keen competition. Supply was greater than demand for the first time in many years because of increased production and the cessation of nickel deliveries to the United States stockpiles. Increased supply resulted in a 2½ cents-per-pound reduction in the price of nickel, initiated by Falconbridge Nickel Mines, Limited and followed by other companies, and then a 13-p.c. reduction in production in the fourth quarter by The International Nickel Company of Canada, Limited. Further, Société Le Nickel of France began marketing small amounts of nickel of New Caledonian origin in the United States.

On the world market, there was little change in the source of nickel. Canada and New Caledonia supplied most of the Free World's nickel; Russia and Cuba met the bulk of the Soviet bloc requirements. Production from new sources commenced in East Germany, Czechoslovakia and Brazil but these were all minor suppliers.

Sudbury continued to be the main source of Canadian nickel. International Nickel operated seven mines in the area: Creighton, Frood-Stobie, Garson, Levack and Murray as underground mines and the new Clarabelle and Ellen mines as open pits. The Crean Hill mine, although ready for production, was maintained on a standby basis. In September, International Nickel announced a fourth-quarter cutback from 92,000,000 lb. to 80,000,000 lb. of nickel, necessitating the lay-off of some 2,500 employees, mostly in the Sudbury area. The reduced production did not indicate a lowering of demand but was due to surplus production over and above demand and inventory requirement. The company continued construction work on its Copper Cliff, Ont., iron ore recovery plant to enlarge its capacity from 300,000 to 900,000 tons of pellets a year. The project is scheduled for completion in 1963. Falconbridge Nickel Mines, Limited operated the Falconbridge and East mines in the Falconbridge, Ont., area and the Boundary, Onaping and Fecunis mines on the north rim of the Sudbury Basin. Development work continued at the Strathcona deposit.

Elsewhere in Eastern Canada, Marbridge Mines Limited and Nickel Mining and Smelting Corporation were brought into production. Marbridge, in LaMotte township adjacent to Malartic, is Quebec's first nickel producer. Production is at a minimum rate of 300 tons of ore daily; the bulk nickel-copper concentrates are trucked to Falconbridge

Nickel at Falconbridge for smelting. Nickel Mining and Smelting is milling at a rate of 500 tons daily and its bulk nickel-copper concentrates are trucked to Lac du Bonnet, Man., and then rail-shipped to Copper Cliff for smelting.

In Manitoba, production of the Thompson property of International Nickel, which experienced its first full year of production, plus that of Sherritt Gordon Mines, Limited totalled 62,099 tons. Manitoba now accounts for approximately 26 p.c. of Canadian nickel production. Sherritt Gordon's Fort Saskatchewan refinery near Edmonton, Alta., continued to treat Lynn Lake concentrates and to purchase concentrates from North Rankin, N.W.T. At the Lynn Lake mine of Sherritt Gordon, the Farley shaft is to be deepened to reach expected ore in the block of ground below the present working levels. At the Fort Saskatchewan refinery, construction work was completed on the urea plant and on the addition to the ammonia plant. North Rankin closed in October when minable grade ore was exhausted; the mining and milling plants were dismantled and the townsite sold.

Giant Nickel Mines Limited in British Columbia, a wholly-owned subsidiary of Giant Mascot Mines, Limited, completed its expansion to 1,200 tons daily. Concentrates are exported to Japan.

Copper.—Mine production of copper in Canada in 1962 reached a record high of 458,590 tons valued at \$283,133,249, a tonnage increase of 4.4 p.c. and a value increase of \$27,975,623 over 1961. Reductions in Ontario, Manitoba and Saskatchewan were more than offset by increased production in Newfoundland, New Brunswick, Quebec and British Columbia. Across Canada three mines were closed, eight mines started production and seven were under development. Exploration parties were active in all copper-producing provinces and in the territories.

Six smelters for the reduction of copper and copper-nickel ores and concentrates are operated in Canada. In the Sudbury district of Ontario, International Nickel operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel Mines produces copper-nickel matte at its Falconbridge smelter. Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., smelts concentrates from its mines in Manitoba and Saskatchewan and, since September 1960, has smelted copper concentrates from Sherritt Gordon's Lynn Lake mine. Ores and concentrates from most of the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines, Limited and the Murdochville smelter of Gaspé Copper Mines, Limited, both in Quebec. Copper refineries are operated by International Nickel at Copper Cliff, Ont., and Canadian Copper Refiners Limited at Montreal East, Que. Production of refined copper in 1962 totalled about 383,000 tons.

Production from the three copper-producing mines in Newfoundland in 1962 totalled 8,342 tons valued at \$11,372,350. In the Burlington Peninsula area two copper properties were being explored by diamond drilling and underground development.

New Brunswick rejoined the ranks of copper-producing provinces in January 1962 when ore was shipped from the Wedge mine of The Consolidated Mining and Smelting Company of Canada Limited to the mill of Heath Steele Mines Limited; 750 tons of ore a day were trucked to the mill over a ten-mile road that was built under the federal-provincial roads-to-resources program. Heath Steele continued exploration and development of its zinc-copper orebody some 35 miles north of Newcastle. Near Bathurst, New Brunswick Mining and Smelting Corporation Limited started rehabilitation of the mine and construction of a 3,000-ton-a-day mill at its No. 12 mine. The Canadian National railways will construct a 15-mile branch line from Nepisiguit Junction to the property and production at 3,000 tons a day will start early in 1964. Concentrates from this operation will be shipped to Belgium from Dalhousie. New Brunswick's copper production in 1962 totalled 6,629 tons valued at \$4,109,856.

There were 18 copper-producing mines in Quebec in 1962 with a combined output of 151,390 tons of copper valued at \$93,861,854. Production cuts of 5 p.c. were maintained

at the mines of Noranda Mines, Limited (Horne mine), Waite Amulet Mines, Limited and Gaspé Copper Mines, Limited. Solbec Copper Mines, Ltd. started production of copper and zinc concentrates in January at its 1,000-ton-a-day mill about 53 miles northeast of Sherbrooke in the Eastern Townships. Cupra Mines Ltd. started shaft-sinking at its property approximately $2\frac{1}{2}$ miles south of the Solbec mine; mining will start in 1964 and the ore will be trucked to the Solbec plant for milling. In the Chibougamau district, Campbell Chibougamau Mines Ltd. started development of a new ore occurrence on four levels below the previously mined orebody. Merrill Island Mining Corporation, Ltd. deepened its main shaft and started exploration and development on three levels of a recently discovered orebody. In the Noranda-Val d'Or-Normetal area of northwestern Quebec, production was maintained at the established mines and underground exploration and development started at several prospects. Lake Dufault Mines, Limited started shaft-sinking at its property adjoining Waite Amulet Mines, on the east. In Joutel Township north of Amos, Joutel Copper Mines Limited started sinking a three-compartment shaft on its property, and Rio Algom Mines Limited announced plans to start sinking on its claims in the same area. Mine plant construction and underground development was proceeding at the mines of Mattagami Lake Mines Limited, New Hosco Mines Limited and Orchan Mines Limited in the Mattagami Lake area; production from these properties is scheduled to begin in the latter part of 1963. Exploration parties were active in all parts of Quebec, particularly in the Belleterre, Noranda and Joutel areas in the northwest and in Ungava where interest was centred around Romanet Lake.

Copper production in Ontario declined in 1962 to 184,684 tons valued at \$113,481,766 from the 211,647 tons valued at \$122,421,860 produced in 1961, a result of the cut in production by International Nickel at its Sudbury mines. This company operated seven mines, three mills, two smelters and a copper refinery in the Sudbury district. Falconbridge Nickel Mines, Limited, the other large nickel-copper producer in the area, operated six mines, three mills and a smelter and shipped nickel-copper matte to its refinery in Norway. The copper-zinc mines in the Manitouwadge area produced steadily all year as did North Coldstream mine near Kashabowie and Rio Algom's Pater mine at Spragge. Kam-Kotia Porcupine Mines, Limited, west of Timmins, discovered a new orebody close to its 900-ton-a-day open-pit mine and preparations were made to sink a shaft and explore the mineralized zone by lateral development. McIntyre-Porcupine Mines, Limited at Timmins modified a portion of its mill in preparation for the treatment of low-grade copper ore to be produced from a section of the McIntyre mine in 1963.

In Manitoba-Saskatchewan, Hudson Bay Mining and Smelting Co., Limited, Sherritt Gordon Mines, Limited and Stall Lake Mines Limited had a combined copper output of 43,061 tons valued at \$26,527,365, a decrease of 2,872 tons and \$288,906 from 1961. Stall Lake Mines started production of copper-zinc ore late in 1962 from a property four miles southwest of Snow Lake, Man. The ore is sold to Hudson Bay for smelting. Hudson Bay operated a central mill and smelter on ores from the Schist Lake and Chisel Lake mines in Manitoba, the Coronation mine in Saskatchewan and the Flin Flon mine that straddles the Manitoba-Saskatchewan boundary. Development of the Stall Lake and Osborne mines near Snow Lake, Man., was continued by Hudson Bay. Sherritt Gordon produced copper concentrate at its nickel-copper mine and mill at Lynn Lake, which was smelted at Flin Flon.

Copper production in British Columbia continued the spectacular rise that started in 1960. The 1962 production of 53,709 tons valued at \$33,299,715 exceeded that of 1961 by 37,864 tons and \$24,093,777. Craigmont Mines Limited, near Merritt, is now Canada's third largest copper mine and produced approximately three quarters of British Columbia's 1962 copper production. Bethlehem Copper Corporation Ltd. started production in December 1962 at its open-pit mine in Highland Valley, approximately 26 miles southeast of Ashcroft; output will be at the rate of 3,300 tons of ore a day and concentrates will be shipped to Japan. Howe Sound Company's mine at Britannia Beach continued production at 1,500 tons of ore a day and concentrates were shipped to Tacoma, Washington. Phoenix Copper Company Limited, near Greenwood, increased its mill capacity to 1,500 tons a day

and shipped copper concentrates to Tacoma; its 1963 copper concentrates will go to Japan. Consolidated Woodgreen Mines Limited suspended operations in April. On Vancouver Island, Cowichan Copper Co. Ltd. brought the Sunro mine at Jordan River into production in March. Concentrates from the 1,500-ton-a-day underground concentrator were shipped to Japan. The Consolidated Mining and Smelting Company of Canada Limited started production in September at the Benson Lake property of Coast Copper Company Limited. The Benson Lake mill will treat 750 tons of ore a day and concentrates will be shipped to Japan. Exploration parties were active in many parts of British Columbia; the greatest activity was in the Buttle Lake and Duncan areas of Vancouver Island, the Highland Valley-Merritt-Princeton area of south-central British Columbia and the Unuk River section of the northwestern part of the province.

Copper production in the Northwest Territories and the Yukon Territory totalled 4 tons valued at \$330,961. Production ceased with the closure in October of North Rankin Nickel Mines Limited's nickel-copper mine at Rankin Inlet on Hudson Bay and a suspension of operations at the Johobo mine of Dominion Explorers Limited at Athleen Lake in the Yukon.

Iron Ore.—The decreasing level of iron ore shipments, evident since 1959, was sharply reversed in 1962 when total shipments reached an all-time high of 27,898,713 tons, a 37 p.c. from 1961. Output of all producing provinces was higher. At the same time, some companies experienced a continuation of the former trend toward lower shipments at softer prices as a result of increased competition and a generally stagnant, increasingly active, international market. Most companies intensified their ore-research programs during the year and the trend toward producing a beneficiated product for marketing rather than direct-shipping ore continued.

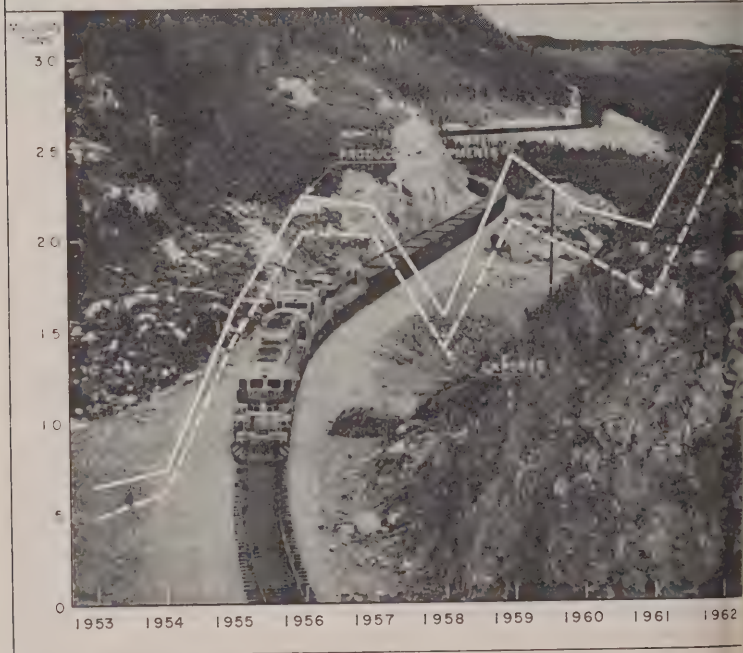
There are five main market areas for Canadian iron ore—the United States, Britain, Western Europe, Japan and Canada. The United States is the principal market and the level of ore consumption there rose slightly during 1962. The increase in exports from Canada exceeded considerably the increase in supply from other foreign sources and from domestic mines. The main reason for this was a high level of operation by Canada's five largest iron ore producers which are integrated with United States steel companies. On the other hand, non-captive ore sales by these and other Canadian producers, except those in British Columbia, tended to weaken.

In Western Europe, steel production in most countries levelled off or declined slightly after a decade of continuous growth. Exports from Canada in 1962 to customers in Europe decreased except for relatively small increases to Italy and France. A large portion of the net decrease in exports was experienced by one company whose ore is particularly subject to rigorous competition from new, higher-grade sources in Africa, Asia and South America.

In Japan, the rapidly increasing ore-consumption rate levelled off unexpectedly early in 1962. As a consequence, the planned imports for the year were reduced by about 20 p.c. Canadian producers were accordingly affected. Despite the cutbacks, there was a substantial increase in exports from British Columbia, the sole Canadian supplier to Japan, because of previously negotiated contracts.

Developments in the Canadian iron and steel industry have increased the ratio of Canadian to foreign ore consumed in recent years, a trend that can be expected to continue, particularly after 1965, despite a decline in 1962. By 1965, a new project will come into production in Labrador that will provide nearly 2,000,000 tons of captive ore to the Canadian industry. However, domestic consumption of Canadian iron ore decreased slightly in 1962 although steel production reached a record level approximately 10 p.c. above that of 1961. Imports from the United States and other foreign sources increased. The reason for these opposing trends is that during the period before Canadian iron ore became abundantly available in the 1950's, Canadian steel producers obtained most of their ore requirements from United States iron ore mining firms in which they had a financial interest and/or traditional commercial links.

PRODUCERS' SHIPMENTS AND EXPORTS OF IRON ORE, 1953 - 62



The decrease and stabilization of the external value of the Canadian dollar at a rate below that of the United States on May 2, 1962, was of net benefit to Canadian iron ore exporters. Increased revenue from export sales more than offset the additional capital charges that several operators must repay in foreign currency. The net benefit to several producers, however, was largely dissipated because the base selling price of direct-shipping ore in North America was lowered. In addition, competition from other exporting countries increased the pressure on prices received for Canadian direct-shipping as well as high-grade beneficiated ore in the European markets.

Iron Ore Company of Canada, with direct-shipping ore deposits astride the Labrador-Quebec border 360 miles north of the port of Sept Îles, Que., is the largest producer, and accounted for 41 p.c. of 1962 Canadian shipments. Initial shipments of high-grade concentrate were made from the company's new operation at Labrador City. Wabana Mines of the Dominion Steel and Coal Corporation, Limited, produces medium-grade concentrate from its underground mines on Bell Island, Nfld., and accounted for about 5.2 p.c. of the year's shipments. High-grade pellets from Hilton Mines, Ltd. near Shawville, Q.B., accounted for another 3.1 p.c. Quebec Cartier Mining Company, a new producer in 1962, contributed 18.5 p.c. by shipping high-grade concentrate from its new mine and beneficiation plant at Gagnon and its port at Port Cartier, Que.

In Ontario, Caland Ore Company Limited, Canadian Charleson, Limited and Steep Rock Iron Mines Limited continued to produce direct-shipping and medium-grade concentrates in the Atikokan area. Steep Rock, the area's oldest producer, and Caland accounted for 8.0 p.c. and 4.0 p.c., respectively, of the 1962 shipments. In the Michipicoten area, Algoma Ore Properties Division of The Algoma Steel Corporation, Limited operates mines and a sinter plant at Wawa and accounted for 6.5 p.c. of the 1962 shipments. Marmoraton Mining Company, Ltd. produces high-grade pellets from its mine and plant near Marmora, and Lowphos Ore, Limited produces high-grade concentrate from its operations near Capreol. Together, these companies produced 3.8 p.c. of the country's shipments in 1962.

Six British Columbia producers accounted for 6.5 p.c. of Canadian shipments. Empire Development Company, Limited and Nimpkish Iron Mines Ltd. operate mines on Vancouver Island, and Texada Mines Ltd. produces from mines on Texada Island. Initial shipments were made in 1962 by Brynnor Mines Limited and Zeballos Iron Mines Limited from properties on Vancouver Island, and by Jedway Iron Ore Limited from the Queen Charlotte Islands.

By-product iron ore was produced by The Consolidated Mining and Smelting Company of Canada Limited at Trail, B.C., and by The International Nickel Company of Canada, Limited and Noranda Mines, Limited from plants at Copper Cliff and Cutler, Ont. At Sorel, Que., Quebec Iron and Titanium Corporation smelts ilmenite ore from its mine near Havre St. Pierre to produce titania slag and pig iron. Falconbridge Nickel Mines, Limited commenced production from a new plant near Sudbury, Ont.

Properties being developed for production will result in an increase in Canada's productive capacity to over 40,000,000 long tons by 1965. In the Wabush Lake area of Labrador, Wabush Iron Co. Limited will commence the production of high-grade concentrate and pellets in 1965 at the annual rate of 6,000,000 long tons. In Ontario, Jones & Laughlin Steel Corporation will be producing 1,000,000 long tons of high-grade pellets from new facilities to be erected near Kirkland Lake by 1964.

Gold.—The average Royal Canadian Mint price for gold rose to \$37.41 an oz.t. in Canadian funds in 1962 from \$35.46 in 1961. Despite the higher price, gold production decreased in 1962 to 4,155,210 oz.t. from 4,473,699 oz.t. and production value at \$155,446,407 was considerably lower than the 1961 value of \$158,637,366. The Canadian dollar had been selling at a premium over the United States dollar ever since February 1952. In his Budget Speech to Parliament on June 20, 1961, the Minister of Finance announced that the resources of the Exchange Stabilization Fund would be used to reduce the value of the Canadian dollar in relation to the U.S. dollar. This government policy resulted in a decline in the Canadian dollar and a corresponding rise in the Mint price of gold. The dollar continued to decline and on May 2, 1962 it was announced that, effective immediately, the Canadian dollar would be stabilized at 92½ cents in terms of the U.S. dollar. The new exchange rate was formally established with the concurrence of the International Monetary Fund and the Government of Canada agreed to maintain the Canadian exchange rate within the normal margin of 1 p.c. either side of the fixed value. The range in value for the Canadian dollar was thus set at from \$0.916 to \$0.934 in relation to the U.S. dollar and the corresponding Mint price for gold between \$38.22 and \$37.46 per oz.t.

Decreased production in 1962 was attributed to a number of factors. Two old gold mines in Ontario closed late in 1961; Kerr-Addison Gold Mines Limited in the Larder Lake area of Ontario, Canada's largest single producer, had a 20-p.c. drop in output; and the value of gold ore available for milling was lower in many Ontario and Quebec mines. Extensive underground exploration and development programs, including deepening of existing shafts and changes in mining methods due to increased depth of mining also resulted in fewer tons of ore being milled and increased operating costs in some of the larger mines. However, mines were able to continue operating because of the cost assistance received under the terms of the Emergency Gold Mining Assistance Act and the higher Mint price for gold.

A total of 52 lode gold mines operated during 1962, one fewer than in 1961. Forty-two mines received cost assistance under the terms of the Emergency Gold Mining Assistance Act. Mines not eligible for cost assistance had total costs of less than \$26.50 per oz.t. and sold most of their gold on the open market. During the year, the proportion of gold coming from lode gold mines decreased to 83.4 p.c. from 84.4 p.c. and by-product gold recovered from base-metal ores increased to 15.3 p.c. from 14.1 p.c. Placer gold accounted for 1.3 p.c. compared with 1.5 p.c. in 1962.

Ontario was again the main producer, accounting for 57.6 p.c. of the 1962 total gold output compared with 59.0 p.c. in 1961, but production was lower at an estimated 2,393,817 oz.t. compared with 2,637,720 oz.t. in 1961. Only the Port Arthur mining division showed an increase. Twenty-nine lode mines operated in the province compared with 30 in the previous year. Twelve mines operated in the Porcupine district, the chief producers being Hollinger Consolidated Gold Mines, Limited (Canada's second largest gold producer), McIntyre-Porcupine Mines, Limited and Dome Mines Limited. In the Red Lake-Patricia mining divisions, seven mines operated, the chief producers being Campbell Red Lake Mines Limited, Madsen Red Lake Gold Mines Limited and Dickenson Mines Limited. Kerr-Addison Gold Mines Limited in the Larder Lake area had a drop in output of more than 20 p.c. In the Kirkland Lake area, five mines operated, the main producers being Macassa Gold Mines Limited, Upper Canada Mines, Limited and Wright-Hargreaves Mines, Limited. In the Port Arthur mining division, Consolidated Mosher Mines Limited started shipping ore to the adjoining MacLeod-Cockshutt Gold Mines Limited in January 1962, and Leitch Gold Mines Limited continued to operate. Renabie Mines Limited continued operations in the Sudbury mining division. Some 66,000 oz.t. of gold were recovered as a by-product from base-metal ores in Ontario, mainly from the nickel-copper mines of the Sudbury district. No placer production was reported.

Quebec produced 24.0 p.c. of Canada's gold production compared with 23.6 p.c. in 1961. Fourteen mines operated and production totalled 998,502 oz.t. compared with 1,054,029 oz.t. One small mine, Malartic Hygrade Gold Mines Limited, commenced trucking ore to the custom mill of Malartic Gold Fields Limited in March 1962. The largest lode gold producers were Lamaque Mining Company Limited and Sigma Mines (Quebec) Limited at Bourlamaque and East Malartic Mines, Limited at Malartic. Gold recovered as a by-product from base-metal ores was lower but represented 41.2 p.c. of the total production. No placer production was reported in Quebec.

The Northwest Territories produced 9.5 p.c. of the gold recovered compared with 9.1 p.c. in 1961. All production came from lode mines in the Yellowknife district and totalled 393,433 oz.t. compared with 404,474 oz.t. in 1961. Four mines operated, Giant Yellowknife Mines Limited (Canada's third largest producer) being the main producer.

British Columbia produced 4.1 p.c. of Canada's output compared with 3.7 p.c. in 1961; recovery increased to 169,683 oz.t. from 164,467 oz.t. Three lode gold mines operated but McKinney Gold Mines Limited ceased shipping ore in May 1962. The only large producer was Bralorne Pioneer Mines Limited in the Bridge River area. By-product gold from base-metal mines increased by nearly 40 p.c. and accounted for 22.1 p.c. of the provincial total. Placer recovery accounted for 1.4 p.c. of the total.

In the Prairie Provinces, Manitoba recovered 61,124 oz.t. in 1962 compared with 57,747 oz.t. in 1961. Lode gold from San Antonio Gold Mines Limited and Forty-Four Mines, Limited at Bissett accounted for almost half of the total, the remainder coming as a by-product from base-metal mines in the Flin Flon and Lynn Lake areas. Saskatchewan recovered 67,783 oz.t. from base-metal mines near Flin Flon on the Manitoba-Saskatchewan border and a small amount of placer gold was recovered from the North Saskatchewan River near Edmonton in Alberta.

In the Yukon Territory, the total recovered in 1962 was 54,086 oz.t. compared with 6,878 oz.t. in 1961, all coming from placer operations. About 80 p.c. of Canada's placer gold production comes from dredging and hydraulicking operations of The Yukon Consolidated Gold Corporation, Limited in the Dawson area.

The only gold production in the Maritime Provinces was 299 oz.t. recovered from base-metal ores in New Brunswick. Newfoundland's 1962 production was 16,375 oz.t. compared with 14,429 oz.t. in 1961, all of it coming as a by-product from copper and lead-zinc mines.

Uranium.—The principal uranium deposits in Canada are found in three geographically and geologically different areas. The deposits in the Elliot Lake-Blind River district of northern Ontario occur in quartz-pebble conglomerates and are by far the largest in Canada; ore reserves are estimated at 290,000,000 tons grading 0.12 p.c. U_3O_8 . The deposits in the Bancroft area of southeastern Ontario are the only pegmatitic granite dykes being worked for uranium in Canada. Some of the orebodies in these dykes are unusually large and persistent in depth, and average about 0.10 p.c. U_3O_8 . Vein-type deposits, containing pitchblende, are being mined in the Beaverlodge Lake area on the north shore of Lake Athabasca in northern Saskatchewan. The grade of the ore in these deposits, ranging between 0.18 and 0.25 p.c. U_3O_8 , is relatively high compared with the other two types. The measured, indicated and inferred uranium ore reserves in Canada as of Jan. 1, 1962 were estimated at 300,000,000 tons, grading 0.12 p.c. U_3O_8 [equivalent to 360,000 tons uranium oxide (U_3O_8)] and are considered to be the largest in the world. The reserves calculated for the Elliot Lake district constitute about 98 p.c. of the total.

In 1958, Canada was the world's leading producer of uranium concentrates. In 1959 the value of uranium production amounted to \$331,000,000 and was, for the second consecutive year, higher than the value of any other mineral produced in the country with the exception of petroleum. In 1960 the value of output declined to approximately \$70,000,000 and in 1961 production of uranium oxide (U_3O_8) amounted to 9,641 tons valued at \$195,700,000. Preliminary estimates for 1962 were 8,400 tons valued at \$51,425,000. Production has declined as mines have continued to close following the announcement of the United States Atomic Energy Commission in November 1959 that it would not continue to purchase uranium from Canada in excess of contract commitments that were to expire in 1962 and 1963. As a result of this decision, arrangements were made to allow Canadian producers to stretch out to the end of 1966 the undelivered portion of uranium under their sales contracts. At the end of 1962, eight mines (seven companies) were producing uranium compared with 23 at the peak period in 1959. In the Elliot Lake district, four mines operated throughout the year—Denison Mines Limited, Stanrock Uranium Mines Limited, and two mines (Milliken and Nordic) owned by Rio Algom Mines Limited; in the Bancroft area, two mines, operated by Macassa Gold Mines Limited (Bancroft) and Faraday Uranium Mines Limited, remained in operation; and in the Lake Athabasca district, two mines continued to operate—the government-owned mine of Florado Mining and Refining Limited and the privately owned mine of Gunnar Mining Limited. In 1962, a contract was signed with the United Kingdom Atomic Energy Authority for the delivery of 12,000 tons of uranium oxide (U_3O_8) over a period extending until early in 1970. This contract will permit each of the seven producers to extend its period of operations approximately 16½ months past the completion date of existing contracts with the United States Atomic Energy Commission.

The Mines Branch of the federal Department of Mines and Technical Surveys, in collaboration with Eldorado Mining and Refining Limited and the Canadian Uranium Research Foundation, continued its program of research into non-nuclear uses of uranium. This program was undertaken in an effort to find new uses for uranium and thereby to provide an additional outlet for production during a period of otherwise declining demand. As part of this program, a new uranium steel alloy, developed by the Mines Branch in 1960, has been undergoing tests on a commercial scale.

Uranium producers are allowed to sell as much surplus uranium as they can to countries that hold bilateral agreements with Canada for co-operation in the peaceful uses of atomic energy, but there have been very few sales of this nature. Apart from the special contract agreements for the sale of uranium to the United States and Britain, Canada holds bilateral agreements with Australia, Japan, Pakistan, Sweden, Switzerland, West Germany and EURATOM (Belgium, West Germany, France, Italy, Luxembourg and the Netherlands). For other countries, a Canadian producer may, subject to government approval, sell up to 2,500 lb. of uranium.

Lead and Zinc.—On the basis of lead produced from domestic ores and the recoverable lead content of ores and concentrates exported, Canada's output in 1962, estimated at 190,609 tons, was substantially lower than the 1961 output of 230,435 tons. A large part of this reduction was accounted for by lower metal production at the Trail smelter in British Columbia operated by The Consolidated Mining and Smelting Company of Canada Limited. Output at Trail in 1962 was 152,217 tons compared with 171,833 tons in 1961. The average price of lead was 9.93 cents a pound; in 1961 it was 10.21 cents. Export of lead in all forms during 1962 totalled 185,297 tons, most of it going as metal to Britain (48,082 tons) and to the United States (89,424 tons). Five countries imported lead in concentrates from Canada: Britain, 4,227 tons; Belgium and Luxembourg, 16,018 tons; West Germany, 10,020 tons; and the United States, 29,230 tons. Domestic consumption of primary and secondary lead in 1962 amounted to 77,286 tons.

Unlike lead, estimated production of zinc in all forms, including that from zinc plant residues, at 457,144 tons was considerably higher than the 416,004 tons produced in 1961. Quebec mines completing their first full year of production accounted for a large part of the increase and the remainder was accounted for by production increases at long established mines, most of them in British Columbia and Ontario. Production of refined zinc from Canada's two refineries—at Trail, B.C., and at Flin Flon, Man.—was 280,15 tons in 1962 compared with 268,007 tons in 1961. The average price of Prime Western grade zinc was 11.50 cents a pound in 1962 and 11.97 cents in 1961. Zinc exports during 1962 totalled 453,180 tons—242,457 tons in ores and concentrates and 210,723 tons as metal. Most of ores and concentrates (194,743 tons) went to the United States and the largest sales of zinc metal were made to Britain, the United States and India which imported 92,338 tons, 74,733 tons and 20,266 tons, respectively. Domestic consumption of primary and secondary zinc in 1962 amounted to 68,074 tons.

Five companies, operating six lead-zinc mines and one copper-zinc mine in the southern part of British Columbia produced nearly all of that province's lead and zinc. By far the largest portion was produced by The Consolidated Mining and Smelting Company of Canada Limited which concentrates about 11,900 tons of lead-zinc ore a day—10,000 tons at the Sullivan mine at Kimberley, 1,200 tons at the H.B. mine at Salmo and 700 tons at the Bluebell mine at Riondel. Other producers in this part of the province include Sheep Creek Mines Limited at Toby Creek, Canadian Exploration, Limited at Salmo, and Reeves MacDonald Mines Limited at Remac. At Britannia, 20 miles north of Vancouver, Howe Sound Company was the province's only producer of copper-zinc ore. Among the smaller lead and zinc producers were Mastodon-Highland Bell Mines Limited at Beaverdell in the south-central part of the province, Silbak Premier Mines, Limited at Stewart north of Prince Rupert, and several others in the Slocan district. Most of the concentrates from these mines, and some Yukon Territory and foreign concentrates were treated at the Trail smelter.

All the lead and nearly all the zinc produced in Saskatchewan and Manitoba came from the large Flin Flon mine, the Coronation and Schist Lake mines at Flin Flon and the Chisel Lake mine at Snow Lake, Man. Stall Lake Mines Limited at Snow Lake produced in the latter part of 1962, some copper-zinc ore which it shipped to Hudson Bay's 6,000-ton a-day mill at Flin Flon. Copper and zinc concentrates produced in this mill were treated in Hudson Bay's copper-zinc smelter and electrolytic zinc refinery at Flin Flon. The lead concentrate was sold to a custom smelter.

In Ontario, Geco Mines Limited and Willroy Mines Limited at Manitowadge, north of Lake Superior, were Ontario's only producers of lead and zinc concentrates in 1962. Herbrooke Metallurgical Company Limited continued to operate its zinc roaster at Port Maitland on Lake Erie. The concentrates came from Ontario and Quebec mines.

Quebec's lead and zinc production was somewhat higher than in 1961, due in part to production by The Coniagas Mines, Limited from its lead-zinc-silver mine at Bachelor Lake north of Senneterre, and by Vauze Mines Limited from its copper-zinc mine at Foranda, each of which completed its first full year of operation. Solbec Copper Mines, Ltd., which commenced production of copper, zinc and lead concentrates early in 1962 at its mine in the Eastern Townships, added a substantial amount of zinc and a smaller amount of lead to the province's production. Producers in northwestern Quebec continued to be Quémont Mining Corporation, Limited and Waite Amulet Mines, Limited at Foranda; Normetal Mining Corporation, Limited at Normetal; and Manitou-Barvues Mines Limited and Sullico Mines Limited near Val d'Or. Of these companies, Manitou-Barvues was the only producer of a lead concentrate in addition to copper and zinc concentrates. New Calumet Mines Limited, on Grand Calumet Island in the Ottawa River some 55 miles west of Ottawa, produced lead and zinc concentrates.

In the Atlantic Provinces, the largest producer was American Smelting and Refining Company which operates a zinc-lead-copper mine at Buchans, Nfld. Other producers were Magnet Cove Barium Corporation, which completed its first year of production at Walton, N.S., and Heath Steele Mines Limited which re-commenced milling in mid-year at its mine in the Bathurst area of New Brunswick. In Yukon Territory, the principal sources of lead-zinc ores were the Calumet, Elsa and Hector mines in the Mayo district, operated by United Keno Hill Mines Limited. These ores were treated in the 500-ton-day mill at Elsa.

In 1962, important exploration and development took place in the Bathurst area of New Brunswick, in the Mattagami area of northwestern Quebec and at Buttle Lake on Vancouver Island. Following completion of financial arrangements, Brunswick Mining and Smelting Corporation Limited at Bathurst in mid-year began to make preparations to place its mine properties in production late in 1963 or early in 1964. Mattagami Lake Mines Limited and Orchan Mines Limited announced their intentions of commencing production of zinc concentrates at their Mattagami Lake properties toward the end of 1963. Considerable underground development and surface construction was done by these three companies in 1962. Western Mines Limited completed some below surface exploration and development on its Buttle Lake base-metal property. Also of importance in lead and zinc mining in Canada was the commencement in February 1962 of a 438-mile Canadian National Railways line from Grimshaw, Alta., to Hay River on the south shore of Great Slave Lake in the Northwest Territories. A branch line from this line will serve important lead-zinc deposits at Pine Point on Great Slave Lake. Construction was started on a 200-ton-a-day electrolytic zinc reduction plant at Valleyfield, Que., which will treat concentrates from some Ontario and Quebec mines.

Silver.—Although production of silver in substantial amounts started at two mines in 1962 and several producers completed their first full year of operation, Canada's silver production at 29,955,465 oz.t. was somewhat below the 1961 output of 31,381,977 oz.t. The decline was largely attributable to a drop in British Columbia lead production, with which silver is produced as a by-product. However, silver prices in world markets during 1962 reflected increasing demands for available silver and the Canadian price reached its highest level in 43 years on Oct. 19 at \$1.3175 per oz.t. At the beginning of the year the price was \$1.1012; at the year-end it was \$1.3037. Thus, although production was lower in 1962 its value amounted to \$34,897,604 compared with the value of the 1961 production at \$29,580,651.

Lead-zinc and silver-lead-zinc ores, which are mostly mined in British Columbia, are by far the most important of the various sources of silver in Canada, accounting usually for about 58 p.c. of the total output. Other major sources, from which about

25 p.c. of the production is derived, are copper, copper-nickel and copper-zinc ore especially those mined in Ontario and Quebec. The silver-cobalt ores mined near Cobalt and Gowganda in northern Ontario account for about 15 p.c. of the output and small amounts are derived from lode- and placer-gold ores.

Canada's principal producer of refined silver is The Consolidated Mining and Smelting Company of Canada Limited which recovers silver from silver-lead-zinc ores treated at Trail, B.C. Other producers were Canadian Copper Refiners Limited at Montreal East, Que. (from blister copper), The International Nickel Company of Canada, Limited at Copper Cliff, Ont. (from blister copper), Hollinger Consolidated Gold Mines, Limited at Timmins, Ont. (from gold precipitates), the Royal Canadian Mint at Ottawa (from gold bullion), and Cobalt Refinery Limited at Cobalt, Ont. (from silver concentrates). The last company was formed in mid-1962 to operate a refinery which was erected in 1949 but had never produced on a permanent basis.

United Keno Hill Mines Limited is Canada's largest mine producer of primary product silver. During the year ended on Sept. 30, 1962, this company produced 7,000,837 oz.t. from its three mines in the Mayo district of Yukon Territory. Other leading primary producers in 1962 were: Glen Lake Silver Mines Limited which commenced operations in mid-1962; Agnico Mines Limited; Langis Silver and Cobalt Mining Company Limited; McIntyre Porcupine Mines, Limited; and Siscoe Metals of Ontario Limited all in the Cobalt and Gowganda areas of Ontario. Mastodon-Highland Bell Mines Limited in British Columbia is also a leading producer.

Platinum Metals.—Production of platinum metals—including platinum, iridium, rhodium, ruthenium and palladium—amounted to 453,526 oz.t. valued at \$28,085,500 in 1962, compared with a 1961 production of 418,278 oz.t. valued at \$24,534,349. The metals are derived as by-products of the treatment of nickel-copper ores and the entire output, except for an occasional ounce of placer production from British Columbia or the Yukon, comes from the International Nickel and Falconbridge mines in the Sudbury district of Ontario. The precious metal content of bulk nickel-copper concentrates smelted by International Nickel at Copper Cliff, consisting chiefly of platinum, has been estimated at \$3 a ton. The Thompson nickel project in northern Manitoba and the two new nickel-copper mines in Quebec and Ontario (see p. 522) are potential producers of platinum metals.

Canada, the Republic of South Africa and the Soviet Union supply the bulk of world output of platinum metals which, in 1961, amounted to 1,190,000 oz.t. Of that amount Canada contributed 418,278 oz.t., South Africa an estimated 357,000 oz.t. and the Soviet Union an estimated 350,000 oz.t.

The use of platinum metals in industry is becoming more diverse as research progresses. Palladium-silver alloys are now being used as membranes in diffusion cells in hydrogen purification; members of the platinum group are being increasingly used in fuel cells during research; platinum metals, either as catalysts or as electrode materials, are being considered for many auto smog control units; and the lesser known platinum metals—rhodium, ruthenium and osmium—show increasing desirability as polymerization and hydrogenation catalysts.

Cobalt.—Cobalt is derived as a by-product from the smelting and refining of nickel-copper ores of Sudbury, Ont., and Lynn Lake, Man., and from the nickel ores at Thompson, Man. International Nickel recovers cobalt from its refinery operations at Port Colborne, Ont., and Clydach, Wales, based on its Sudbury and Thompson ores. Falconbridge Nickel recovers cobalt in the refining of its Sudbury nickel-copper matte at its refinery at Kristiansand, Norway. Sherritt Gordon produces refined cobalt powder and briquettes, and cobalt metal strip, in its refinery at Fort Saskatchewan, Alta., using nickel concentrates shipped from its mine at Lynn Lake in northern Manitoba. In 1961, Canadian cobalt production amounted to 3,441,746 lb. valued at \$6,382,502, compared with 3,182,897 lb. valued at \$4,751,543 in 1961.

Columbium.—St. Lawrence Columbium and Metals Corporation, the only Canadian producer of columbium concentrates, in 1962 shipped pyrochlore concentrates containing 967,000 lb. of columbium pentoxide from its mine and mill at Oka, Que., about 30 miles west of Montreal. Two other companies have carried out extensive research and exploration programs in the same area. Geo-Met Reactors Limited produced ferrocolumbium and a pyrochlore steel additive at its Ottawa, Ont., plant for domestic consumption and for export.

Molybdenum.—Molybdenite Corporation of Canada Limited was the principal Canadian producer of molybdenite in 1962 and the only producer of molybdic oxide; its mine and plant are at La Corne, Que. Pax International Mines Limited shipped trial lots of molybdenite from a property near Matachewan, Ont. In 1962, Canadian shipments of molybdenum contained in molybdenite amounted to 797,452 lb. valued at \$1,228,672. Preissac Molybdenite Mines Limited and Anglo-American Molybdenite Mining Corporation continued exploration and development work in the Lake Preissac area of Quebec. Gaspé Copper Mines, Limited successfully completed a pilot-plant study of the feasibility of recovering molybdenite as a by-product of its copper milling operations and will begin recovering molybdenite in 1963.

Titanium.—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec; ilmenite from St. Urbain is sold as heavy aggregate and most of the ilmenite from Allard Lake is melted at Sorel, Que., in electric furnaces by Quebec Iron and Titanium Corporation to produce a high titania slag and pig iron. The slag is used by pigment producers in the manufacture of titanium-base pigments. Exports go mainly to the United States, Britain and Japan.

Domestic consumers of titania slag are Canadian Titanium Pigments Limited at Varennes, Que., and British Titan Products (Canada) Limited at Tracy, Que. The plant at Varennes has a capacity of 50,000,000 lb. of titanium dioxide pigment a year; the plant at Tracy, completed late in 1962, has a capacity of 44,000,000 lb. a year. Atlas Titanium Limited produced ferrotitanium from scrap metal at Welland, Ont., and Geo-Met Reactors Limited made trial lots of low-carbon ferrotitanium using titania slag from Sorel.

Selenium and Tellurium.—These metals are recovered from the anode muds produced by the refining of blister copper in the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont. The principal use of selenium is in the manufacture of dry-plate rectifiers for electronic use; small quantities are used in the manufacture of glass, rubber and pigments. Tellurium is finding increasing use in the electronics fields for the manufacture of modules for the direct conversion of heat into electricity and the conversion of electric energy in a heat-sink for refrigeration purposes; small quantities are used in stainless steel castings, synthetic rubber and glass manufacture. Selenium production in 1962 totalled 506,015 lb. valued at \$2,799,929, an increase of 75,403 lb. and \$951 over 1961 output; tellurium production in 1962 was 61,211 lb. valued at \$367,466, compared with 77,609 lb. valued at \$376,404 in 1961.

Magnesium.—Production of magnesium metal in Canada was estimated at 8,235 tons in 1962 compared with 7,635 in 1961. Dominion Magnesium Limited is the only producer and most of the output is exported. Dolomite of exceptional purity is quarried and reduced to metal by the ferrosilicon method at Haley, Ont. Plant expansion from 5,000 to 10,000 tons annual capacity was completed in 1962. The company is also the only Canadian source for the metals calcium, thorium, strontium and zirconium.

Aluminum.—Canada is second, after the United States, in Free World aluminum production and has an annual capacity at six smelters of 872,000 tons. There are two companies operating. Aluminum Company of Canada, Limited has smelters at Arvida, Isle d'Alaigne, Shawinigan and Beauharnois in Quebec and at Kitimat in British Columbia.

Canadian British Aluminium Company Limited operates a 90,000-ton smelter at Baie Comeau, Que., the capacity of which is to be expanded to 135,000 tons by 1965. As all bauxite or alumina for use by the aluminum smelters is imported, mainly from the Caribbean area, metal production is classed in official statistical data with manufactures and not with smelter production of metals from ores of domestic origin. Production of primary aluminum in 1962 was estimated at 690,000 tons compared with 663,000 tons in 1961; of the latter, 487,000 tons were exported and domestic consumption amounted to 127,000 tons.

Subsection 2.—Industrial Minerals

The value of Canada's production of industrial minerals in 1962 increased by 4.4 p.c. to \$558,181,000 compared with 1961, establishing a new record for the fourth successive year. This segment of the mining industry, which accounts for 20 p.c. of the nation's mineral production, includes the many non-metallic minerals and structural materials listed in Table 5, p. 559. The most important recent developments taking place among them are discussed below.

Asbestos.—Canada is the world's leading asbestos-producing nation and the major supplier of this mineral to the Free World market. During 1962 shipments of asbestos fibre from producing mines amounted to 1,223,509 tons valued at \$132,061,000, a record high output which made up approximately 45 p.c. of world production.

Chrysotile, the most widely used variety of asbestos, occurs in several places in Newfoundland, Quebec, Ontario, British Columbia and Yukon Territory but the main centre of the industry is in the Eastern Townships of Quebec where 12 mines account for more than 90 p.c. of the nation's production. Two mines are in production in other parts of Canada—one in northern Ontario and one in northern British Columbia—and a large deposit at Baie Verte in Newfoundland is being developed, scheduled for production in mid-1963. Canadian Johns-Manville Company, Limited will operate the property and is constructing a 5,000-ton-per-day mill.

Exploration and engineering studies of an asbestos deposit in Ungava are under way. Early in 1962, Murray Mining Corporation announced that an asbestos orebody, 3,600 feet in length and ranging in width from 150 feet to 200 feet, had been delineated at Asbestos Hill, 40 miles southeast of Deception Bay off Hudson Strait. The main ore zone was reported to have a reserve of at least 15,230,000 tons containing 11.3 p.c. of recoverable fibre and the west-end ore zone a reserve of 2,480,000 tons. The fibre from this deposit is semi-harsh and fast-filtering and consequently should find application in the asbestos-cement industry. In May, Asbestos Corporation acquired an option on the property and began detailed engineering and feasibility studies. Development will require not only mining and milling plants but also power-generating facilities, a townsite, a transportation route to the coast and dock facilities for ocean transport.

Another development of interest to the industry during 1962 was the acquisition by the Eternit group of a 10-p.c. interest in Asbestos Corporation. This group embraces asbestos manufacturing firms in Europe.

Cement.—It is significant to note that Portland cement production in Canada now ranks ninth in the entire mineral industry in value of output. Production in 1962 reached an all-time high at an estimated 6,786,000 tons valued at \$113,864,000. The many major engineering projects that have been constructed in recent years throughout the country have contributed to the growth of this industry. At the same time, concrete and concrete products have become leading building materials in contemporary construction, with precast and prestressed structural shapes replacing structural steel on an increasing scale. To serve the construction industry in the Montreal area, Francon Limited has entered the field of precast and prestressed concrete products with a modern plant at St. Michel which contains the Continent's largest tension beds for prestressed beams and girders.

The first all-lightweight concrete multi-storey building in Canada, the National Trust Office, was completed in Toronto in 1962. More than 13,000 cu. yards of lightweight concrete, with a specified 28-day compressive strength of 4,000 psi. and a unit weight of 115 lb. per cu. foot, were cast in the 22-storey concrete frame. In addition, about 75,000 lightweight blocks were used in masonry. Precast concrete curtain walls with exposed aggregate finish emphasize a modern trend in architectural application.

Potash.—Nineteen years after potash salts were discovered at depth in Western Canada, this important natural resource was brought into successful production. Bulk concentrates of muriate of potash began moving to the market from the Esterhazy, Sask., plant of International Minerals and Chemical Corporation (Canada) Limited on Sept. 1, 1962. The project reached full production a few months later. With a capacity of 1,200,000 tons K_2O equivalent per annum, Esterhazy is the largest capacity potash unit in North America if not in the world. The mine shaft, 18 feet in diameter, was bottomed at 3,380 feet to provide access to the potash horizon at about 3,150 feet. Using the room-and-pillar method, potash is excavated by electrically operated, continuous-mining machines with twin cutting heads operating in a vertical plane and cutting a $7\frac{1}{2}$ -foot by 13-foot oval opening.

The Potash Company of America Ltd. completed a 16-foot concrete-lined shaft at Patience Lake near Saskatoon in 1958 and limited production was sustained for a ten-month period in 1958-59. However, technical difficulties in maintaining a dry shaft caused the mine to cease operation for extensive repairs. The company plans to resume production at an annual rate of 350,000 tons K_2O equivalent during 1963.

The emphasis being placed on Canadian potash is demonstrated by the fact that, at the end of 1962, 15 companies had under their control more than 2,000,000 acres underlain by potash and had invested an estimated \$100,000,000 in Saskatchewan. World demand for potash is increasing by more than 500,000 tons K_2O equivalent per annum. Since, depending on the grade, several times this amount of ore is needed, a new mine each year is required to satisfy this demand. By the end of 1963 the Canadian potash industry should be in a position to supply 15 p.c. of the world market and will contribute \$40,000,000 annually to the country's mineral economy. Almost all the output will be exported, mainly to the United States but also to overseas markets, particularly to Asia.

Sulphur.—The large-scale development of natural gas resources of western Alberta and northwestern British Columbia has brought about a dramatic change in Canada's sulphur position. A few years ago, this country was entirely dependent upon foreign elemental sulphur to supplement the sulphur dioxide and sulphuric acid recovered from smelter gases and from the roasting of pyrite; today, it stands as a major source of that product. As a direct result of the expanded demand for western natural gas, the 1962 production of refined elemental sulphur was 668,000 tons, almost double the 1961 output, having a value of nearly \$9,000,000.

Canada ranks second to the United States among the elemental sulphur producers of the world and is capable of supplying 15 p.c. of the present world market. As a consequence, the Canadian industry is becoming a dominant factor in global markets. In 1962 shipments entered the northern United States and bulk cargoes moved from West Coast ports to the Republic of South Africa, Formosa, Australia and Britain.

Gypsum.—Although gypsum is mined in Newfoundland, Nova Scotia, New Brunswick, Ontario, Manitoba and British Columbia, 83.0 p.c. of the Canadian output comes from Nova Scotian mines and much of it is exported to the United States in crude form. Total shipments in 1962 amounted to over 5,000,000 tons valued at \$9,033,000. The quantity increase over 1961 was 5 p.c., accounted for by increased demand in the United States. The year was an active one for the industry. Of particular note was the commencement of shipments by the Flintkote Company of Canada Limited from its deposit in the Flat Bay area of Newfoundland where gypsum reserves are estimated to

be 200,000,000 tons. The provision of deepwater shipping facilities and an aerial transportation system made it possible to ship the crude product to the parent company's board plants in eastern United States and to the company-operated board plant at Humbermouth, Nfld. In September, Bestwall Gypsum Company began shipping from the River Denys deposit on Cape Breton Island to company plants in eastern United States. Storage and shipping facilities were installed at Point Tupper on the Strait of Canso.

Salt.—Shipments by the salt industry in 1962 reached an all-time high, exceeding 3,600,000 tons with a value of over \$23,000,000. Approximately one half of the Canadian production is rock salt mined at Pugwash in Nova Scotia and at Ojibway and Goderich in Ontario, mainly for use on roads and in chemical plants. Although the Canadian salt industry is facing growing competition from United States producers, it exports about one third of its production.

Silica.—A major development in the silica industry during 1962 was the \$1,000,000 expansion of the Canadian Silica Corporation plant at St. Canut, Que. Capacity was increased threefold to 300,000 tons annually and wet-processing stages were added. The company is quarrying a sandstone from the Potsdam formation and processing it into sand products for industry. A premium-quality sand is finding ready acceptance in the manufacture of flint-glass containers and glass sand is processed for the manufacture of coloured containers and sheet glass. The main market for high-quality silica sand is in the Montreal and Trois Rivières area where it is used by the glass industry and also in the manufacture of silicon carbide. Until recently, most of the requirements were imported from the United States.

Subsection 3.—Petroleum and Natural Gas

One of the best ways of measuring a resource industry's progress is to examine its production trend. On this basis, it may be said that the oil and natural gas industries had a successful year in 1962 and, further, circumstances at the year-end were such as to foretell a good year for 1963. Crude oil production averaged 668,000 bbl. daily during 1962. In addition, output of liquid hydrocarbons from natural gas was also at record levels and added an average of 66,000 bbl. daily to bring total production of all liquid hydrocarbons (crude oil, condensate, natural gasoline, butane and propane) to 734,000 bbl. daily. The rates of production at the year-end and during the early months of 1963 were at record highs, and by February output had exceeded the national oil policy goal of 800,000 bbl. daily of all liquid hydrocarbons, as set for the end of 1963.

All western provinces except Manitoba shared in the increased production. Manitoba's output since 1957 has been declining steadily and the absence of new oil discoveries indicates a continuation of this trend. Exploration and development of British Columbia oil resources continued at a high level as a result of the completion of a new oil pipeline in 1962. This new line permits oil from northeastern British Columbia to be delivered to the Trans Mountain pipeline at Kamloops which in turn serves refineries near Vancouver and in the State of Washington. A further inducement to exploratory industry activity in British Columbia arises from the fact that considerable land remains to be tested for oil and gas resources. In Alberta production increased by 4 p.c. and established an annual record. Saskatchewan output rose by 15 p.c.

Production of natural gas liquids is adding significant quantities to the over-all production of liquid hydrocarbons. Production in 1962 was as follows: Alberta 21,700,000 bbl., British Columbia 1,400,000 bbl. and Saskatchewan 1,100,000 bbl. Natural gas production reached a record level in 1962, 46 p.c. greater than 1961. The newly acquired export market in the United States, served by the Alberta-to-California pipeline completed in December 1961, and increased domestic demand gave the gas industry its best year in both export and domestic markets.

The number of wells drilled annually in Western Canada in each of the past five years has been fairly constant, ranging from 2,450 to 2,650. In 1962, the number completed (excluding service wells) was 2,460, about the same as in 1961. A sharp increase in drilling in British Columbia counterbalanced declines in the other western provinces and the territories. The generally greater depth of wells brought about a small increase in the total footage; nearly 13,600,000 feet were drilled compared with 13,470,000 feet in 1961. There was a notable increase in the proportion of exploratory drilling in 1962; of the total drilled footage, 36 p.c. was exploratory, compared with 29 p.c. in 1961 and 31 p.c. in 1960, partly accounting for the significantly greater number of dry holes, of which there were 79. Gas well completions totalled 344 and there were 1,237 new oil wells.

The decline in geophysical activity, in terms of crew-months, which had been evident since 1952, was arrested. A month-by-month comparison of 1961 and 1962 shows geophysical work approximately the same for both years. In Alberta, where seismic survey crews were more active in 1962 than in the previous year, much ground was being resurveyed. Oil companies realized that small- and medium-sized oil pools could have been overlooked by earlier surveys because of less advanced methods of field work and interpretation and also because of a preoccupation with finding large reef fields.

Alberta.—In 1962, the total footage drilled in the search for and development of petroleum and natural gas reserves amounted to 9,100,000 feet, a decrease of more than 30,000 feet compared with 1961. Despite this total decrease, exploratory drilling increased by 200,000 feet to nearly 3,200,000 feet. Development of known pools and fields decreased very sharply as a consequence of a lack of large new fields. No major fields have been found since the Swan Hills discoveries of 1957, and the fields of that region are now almost fully developed. The 684 oil wells completed in 1962 represent a decrease of 100 wells from the preceding year. Gas-well completions decreased sharply for the first time in several years, with 272 gas wells drilled. The net result of 1962 drilling was to increase the province's total of new oil wells capable of production from 1,529 to 10,796, and gas wells from 1,088 to 1,240. These figures take into account abandonments and some conversions to service wells.

Although oil and gas finds in 1962 did not indicate the discovery of any major fields, several appear likely to lead to the development of some medium-sized fields. The most interesting exploratory activities took place late in the year at Snipe Lake, 35 miles southwest of Lesser Slave Lake. An oil discovery in reef formation led to an important land play involving several large oil companies. Although several subsequent wells found oil and much ground remains to be tested, the field does not appear to be in the size category of such fields as Swan Hills. High prices were paid for land in the Edson region, 125 miles west of Edmonton, following discovery of significant amounts of gas in Mississippian strata and of oil in the Cardium formation. In March 1962, a very productive oil well was drilled at Loon Lake near the Red Earth oil field, 80 miles north of Lesser Slave Lake. At Panther River, 70 miles northwest of Calgary, large reserves of sulphur were indicated by a gas well which had a high content of hydrogen sulphide in its output. A good natural gas discovery was made 13 miles to the southwest of this sulphur well. In the more settled regions in the southern half of Alberta, various small- and medium-sized oil and gas discoveries were made, one of the more notable locales being at Sylvan Lake near Red Deer, where both oil and gas were found in several geological horizons in a series of wells.

A major step toward the eventual large-scale production of crude oil from the Athabasca oil sands was taken in 1962 when the Alberta Oil and Gas Conservation Board gave approval to a project which is to extract crude oil from the sands at a rate of 31,500 bbl. a day. This will be the first commercial extraction of oil from the sands, and actual production of marketable crude is scheduled for the end of 1966. Although this is only a moderate-sized project, two applications for large projects are before the Board, each of which calls for the extraction of 100,000 bbl. daily from the oil sands.

British Columbia.—A very substantial increase in the amount of drilling in British Columbia in 1962 brought the total for the year to nearly 2,000,000 feet. The 1961 total an all-time record at that time, was slightly more than 1,000,000 feet. Drilling in 1962 was divided almost equally between exploration and development. The province had high success ratio in drilling, with 159 new oil wells and 62 gas wells compared with dry holes. The large number of oil wells was mostly the result of intense development of the Boundary Lake field, where the number of oil wells capable of production was increased from 130 at the end of 1961 to 250 in December 1962. Considerable development was also carried out in several smaller fields, especially Milligan Creek, Peejay, Wildmin and Blueberry. In exploration, the most important results of the drilling were several large gas discoveries. Near Fort Nelson, the Slave Point formation yielded two particularly good gas producers known as the Yoyo and Junior wells. Nearer to Fort St. John the Pink Mountain and Moberly Lake gas discoveries, producing from Mississippian and Triassic formations, respectively, were among the more noteworthy results of exploration work.

Saskatchewan.—Drilling in Saskatchewan has been declining since 1957, except for a brief upturn in 1961. In 1962, 580 wells (excluding service wells) were completed compared with 643 in 1961. However, a renewal of exploration interest in the province was reflected in a slight increase in footage drilled—which amounted to 2,350,000 feet—and considerable increase in the number of deep exploratory holes. Several recent deep discoveries in the Williston basin in Montana and North Dakota have resulted in new attempts to find oil in lower Palaeozoic rocks in the portion of the basin underlying southeastern Saskatchewan. The most important oil discovery in the province was probably one made near the Willmar field, 12 miles northeast of the Steelman field. The well was followed up with nearly a dozen wells in the same pool. The most active area in terms of development was once again the Dodsland field in the Coleville-Smiley region, although drilling there has decreased since 1961.

Manitoba.—Twenty-one wells were drilled in Manitoba in 1962 compared with 21 in 1961. A measure of the decline of oil exploration and development is obtained by comparing these figures with the peak period 1954-57 when more than 200 wells were drilled annually. Well footage in 1962 totalled 57,393 feet of which 40 p.c. was of an exploratory nature. Two oil discoveries were made in the southeastern corner of the province.

Yukon and Northwest Territories.—The eight wells completed in the territories all exploratory, aggregated 54,000 feet, about three quarters of the 1961 footage. No important discoveries were announced. Three deep wells were being drilled in Yukon Territory in early 1963. The well-known Melville Island dry well was abandoned early in 1962 at a depth of 12,543 feet. Despite this failure, oil-company interest in the Arctic islands has remained strong, especially since mapping has revealed outcrops of oil-saturate sands on northwestern Melville Island, a discovery which removes doubt as to whether oil-forming conditions existed during the geological history of the region.

Eastern Canada.—In Ontario, more deep-well exploration and less shallow-well field development resulted in an increase in footage drilled, despite a pronounced decrease in the number of wells drilled; a total footage of 360,629 feet and 205 wells (excluding service wells) in 1962 compared with 344,816 and 253 wells in the preceding year. Exploratory drilling comprised 46 p.c. of the footage. Since the discovery of the Gobles field in Cambrian strata in 1960, greater emphasis has been placed on testing the lowest Palaeozoic formations. In the field development sector, a pilot waterflood project was started in the province's most productive oil field, the Rodney field.

In Quebec, activity declined in the region around the Pointe du Lac gas field where a large number of shallow wells had been drilled in 1961. However, a deep hole of proposed depth of 4,500 feet was started late in 1962, and at about the same time a hole of similar anticipated depth was started on Anticosti Island. Two deep diamond drill holes, both dry

were put down in search of oil on the Gaspé peninsula. In New Brunswick, equipment was ordered in preparation for a waterflood scheme in the small and aging Stoney Creek oil and gas field.

Petroleum Refining and Marketing.—Two new refineries were being built at the close of 1962; one near Toronto, Ont., will have a capacity of 30,000 bbl. daily and one near Dartmouth, N.S., will have a capacity of 13,500 bbl. daily. Also, three refineries were modified during the year to increase total capacity by 17,900 bbl. daily. The BP Refinery Canada Ltd. plant at Montreal, Que., was enlarged to 30,000 bbl. daily, an increase of 1,000 bbl.; the Regent Refining Limited plant at Port Credit, west of Toronto, increased its capacity by 9,000 bbl. to 35,000 bbl. daily; and the British American Oil Company limited in Edmonton, Alta., added a unit to increase capacity from 7,700 to 12,600 bbl. daily. The rate of growth of the petroleum refining industry from 1942 to 1962 is indicated in Table 1.

Petroleum Refining Throughput Capacity, by Region, as at Dec. 31, 1942, 1952 and 1962

Region	1942		1952		1962	
	bbl. per day	p.c.	bbl. per day	p.c.	bbl. per day	p.c.
Atlantic Provinces.....	34,250	14.7	22,300	4.9	106,300	10.9
Quebec.....	67,000	28.7	164,000	35.8	301,000	30.7
Ontario.....	68,000	29.1	104,600	22.8	269,820	27.5
Prairie Provinces and Northwest Territories.....	39,865	17.1	139,250	30.4	205,240	21.0
British Columbia.....	24,500	10.4	28,350	6.1	97,300	9.9
Canada.....	233,615	100.0	458,400	100.0	979,660	100.0

Consumption of Canadian crude oil by domestic refineries in 1962 averaged 464,000 bbl. daily, an increase of 9 p.c. over 1961. Foreign oil received by plants in Canada averaged 370,000 bbl. daily, bringing total crude oil received by refineries in Canada to an average of 834,000 bbl. daily for the year. Domestic oil thus accounted for almost 56 p.c. of all crude received in 1962 compared with 54 p.c. in 1961. Refineries in the United States, Canada's only market for crude oil and petroleum products, received an average 235,000 bbl. of crude oil daily from Canada, an increase of 30 p.c. over 1961. Refineries in the United States Puget Sound region, served by the Trans Mountain pipeline, received an average of 125,000 bbl. daily in 1962 and exports via the Interprovincial pipeline to the Great Lakes region averaged 110,000 bbl. daily. In this region, 40,000 bbl. a day went to plants near Lake Erie and the remainder of 70,000 bbl. a day went to plants west of Lake Erie but east of the Rocky Mountains. Imported oil continued to come chiefly from Venezuela and Middle East countries. Table 2 gives the regional demand for domestic and foreign crudes.

2.—Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region, 1951, 1961 and 1962

Region	1951		1961		1962	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day
Quebec and Maritimes.....	—	161,794	—	358,723	—	368,720
Ontario.....	37,959	43,680	220,578	7,000	229,268	1,356
Prairie Provinces and Northwest Territories.....	91,317	248	140,170	—	160,710	—
British Columbia.....	—	22,058	66,439	—	74,360	—
Canada.....	129,276	227,780	427,187	365,723	464,338	370,076

Natural Gas Processing and Marketing.—During the past decade, Canadian reserves of natural gas have become sufficient to supply not only an expanded Canadian market but also several areas in the United States. Much of the gas for these markets requires processing to remove constituents, such as sulphur, which add further to the mineral output of Canada. Propane, butane and other liquid hydrocarbons valuable to the petroleum refining and petrochemical industries are also recovered. The extent to which the natural gas processing industry has developed is apparent from a comparison of gas plant capacities. In 1952 there were five plants having a combined raw-gas treating capacity of 380,000 Mcf. daily. By 1962 there were 66 plants in Alberta, five in Saskatchewan, two in British Columbia and one in Ontario, a total of 74 plants having a raw-gas capacity of 3,400,000 Mcf. daily. The gas from these plants and from several fields which produce dry gas provided over 750,000,000 Mcf. of gas for all markets in 1962. Exports amounted to over 900,000 Mcf. daily and domestic sales to 1,125,000 Mcf. daily.

There were small quantities of gas imported into Canada, mostly into southwestern Ontario; in 1962 imports were only about 5,500,000 Mcf.

Subsection 4.—Coal*

The small increase in coal production noted in 1960 was, unfortunately for the industry, short-lived and further decline was experienced in 1961, the industry becoming more and more the victim of competition from other fuels. Closure of high-operating-cost mines, although improving the financial situation of the individual companies, increased productivity per man-day, and more and improved coal cleaning and quality control were not sufficient to halt the decline in demand. Production in 1961 was about 8,000,000 tons lower than in 1951 and consumption about 22,500,000 tons lower. Imports were reduced to less than half—from 26,000,000 tons to 12,000,000 tons. The one bright spot was the increase in exports of western bituminous coking coal to the United States and Japan which resulted in a 1961 export total double that of 1951. Mechanization of production, underground and surface coal preparation, particularly of slack and fine sizes, and efforts to control quality through coal sampling and analysis have all been increased to enable the industry to supply higher quality products at reduced costs. On the basis of costs per ton and per million Btu some improvement was noted in 1961.

Assistance to the coal industry was given by the federal and provincial governments through continued research programs. The problem of fine coal production received attention with research directed toward improved methods of mining, beneficiation and combustion. Technical assistance rendered in the field of quality control through sampling and analyses, and studies of the coking properties of coals in relation to their preparation for export markets and their use in prospective steel industries are other means by which assistance is given.

Financially, the Federal Government continued assistance to the coal industry through the Dominion Coal Board (see p. 549) with aid in the acquisition of new equipment and subventions on coal transportation. More than 32 p.c. of the coal production was moved with the aid of subvention payments, the total tonnage to which this applied, 3,300,000 being 11.6 p.c. more than in 1960. The value of this assistance, which in 1960 amounted to \$16,344,196, rose in 1961 to \$17,854,456. The Federal Government also made payments in 1961 totalling about \$1,570,000 under the Atlantic Provinces Power Development Act, 1958, which indirectly aids the marketing of coal.

Production and Value.—Production of coal in Canada in 1961 decreased 5.6 p.c. to 10,400,000 tons, only about 54 p.c. of the record production of 19,139,112 tons in 1951. The average value for all coal was \$6.737 per ton or 29.42 cents per million Btu. The declining production and accompanying mine closures were reflected in the employment in the mines, where the number of man-days dropped from 2,552,127 in 1960 to 2,291,933

* This review covers the year 1961, the latest year for which final figures were available at the time of publication; preliminary figures for 1962 are given in Tables 22-25, pp. 572-573.

1961—more than 10 p.c. In Nova Scotia, the major coal-producing province and most affected by declining coal markets, the decrease in coal-mine employment was 10.3 p.c. from 1,711,150 man-days in 1960 to 1,535,176 man-days in 1961. Employment in Alberta and Saskatchewan coal mines dropped 21.4 p.c. and 18.4 p.c., respectively, but in British Columbia it increased by more than 4 p.c.

The major part (65.7 p.c.) of the coal produced was bituminous, valued at \$8.990 per ton or 33.46 cents per million Btu at the mine. Subbituminous accounted for 13.1 p.c. of production and lignite for 21.2 p.c. The average value of subbituminous coal was \$4 per ton, this being 23.39 cents per million Btu, and the value of lignite was \$1.706 per ton at 11.53 cents per million Btu. Bituminous coal production decreased 10.4 p.c. and subbituminous 12.8 p.c., but lignite increased 1.9 p.c. as a result of the demand by thermal power plants in Saskatchewan.

The proportion of the output won by stripping methods was more than 38 p.c. The output per man-day of coal from Canada's strip mines was 15.4 tons in 1961 compared with 3.149 tons from underground mines. This represented an increase of 0.3 tons for strip mines and an increase of 0.182 tons for underground mines. The over-all output per man-day increased from 4.326 to 4.536 tons.

Consumption, Imports and Exports.—The consumption of coal in Canada decreased 7 p.c. in 1961 to about 21,600,000 tons. About 56 p.c. of the coal consumed was imported, more than 91 p.c. of it being bituminous coal used mainly in Ontario and Quebec. Total imports of coal were about 10 p.c. lower than in 1960. The production of coke used more than 5,300,000 tons of coal, of which about 88 p.c. was imported. The sale of coal by retail fuel dealers to the commercial and household heating markets decreased more than 600,000 tons. Use of coal by industrial consumers, including thermal-electric power plants, decreased slightly to 9,850,000 tons in 1961 compared with 9,890,000 in 1960. Railway locomotives are no longer a significant market for coal with only 11,000 tons being used in 1961 compared with the 9,800,000 tons used for this purpose in 1952.

Exports of Canadian coal in 1961 amounted to 939,360 tons compared with 852,921 tons in 1960. Most of this went to the United States and Japan for blending in the manufacture of metallurgical coke. The manufacture of briquettes decreased from 81,182 tons in 1960 to 67,327 tons in 1961.

Provincial Activities of the Industry.—Coal is produced in five provinces and a large share of the market for the industry is concentrated in Central Canada where there is no coal production. A small amount of coal is also mined in the Yukon Territory.

Nova Scotia.—Nova Scotia, with a coal production of 4,300,758 tons, accounted for more than 41 p.c. of the Canadian coal output in 1961. Production was 5.9 p.c. lower than in 1960. The coal is high volatile bituminous coking coal mined in the Sydney, Cumberland and Pictou areas, and some non-coking bituminous coal in the Ste. Rose, Inverness and Port Hood areas on the west coast of Cape Breton Island. The over-all value at the mines decreased to \$9.700 a ton from \$9.842 a ton in 1960, representing about 36.06 cents per million Btu. The output per man-day was 2.801 tons in 1961 compared with 2.671 tons in 1960.

All Nova Scotia coal comes from underground mines, most of which are mechanized. Coal-washing plants are operated at two of the collieries and prepare about 27 p.c. of the province's coal production. Much of the output is used locally for industrial steam-raising, electric power production, household and commercial heating and the manufacture of metallurgical coke. In 1961 more than 62 p.c. of the production was shipped to other provinces, mainly Central Canada. Subvention payments were made by the Dominion Coal Board on the movement of 2,323,684 tons.

New Brunswick.—New Brunswick's production, of which 82.1 p.c. was strip-mined, was entirely high volatile bituminous coal from the Minto area, with a small amount from the Chipman and Coal Creek areas. The production of 887,903 tons in 1961, about 8.5 p.c.

of Canada's output, represented a decrease of about 13.6 p.c. Average output per man-day from strip mines was 5.26 tons and from underground mines 1.79 tons. New Brunswick coals had an average value at the mines of \$8.477 a ton, amounting to about 35.62 cents per million Btu.

Modern coal-washing plants equipped with Baum-type and feldspar jigs are operated at two of the strip-mining operations, thus making it possible to mechanically clean 47 p.c. of the province's coal output. A large part of the production is used locally for heating, electric power generation, and processing; more than 15 p.c. is shipped to Central Canada and about 12 p.c. is exported to the United States. Government subventions aided in the moving of 146,201 tons during 1961.

Saskatchewan.—Coal produced in this province was entirely lignite, mined by stripping in the Bienfait and Estevan areas in the Souris Valley. Production in 1961 amounted to 2,208,851 tons, a 1.8-p.c. increase over 1960, and represented about 21.2 p.c. of the Canadian production. It was valued at the mine at an average of \$1.706 per ton, and at 11.53 cents per million Btu was the cheapest source of coal in Canada. The Estevan area serves the provincially owned thermal-electric generating stations, which in 1961 used about 32 p.c. more lignite than in 1960 and consumed about 43 p.c. of the total output. The average output per man-day was 42.247 tons. Almost 35 p.c. of the 1961 output was shipped to Manitoba and about 4 p.c. to Ontario for industrial, commercial and household use. Subvention assistance was given on 104,807 tons.

The production of briquettes, manufactured from carbonized lignite and used entirely for commercial and household purposes, decreased 7.9 p.c. to 32,132 tons.

Alberta.—Several types of coal are available in Alberta, ranging from semi-anthracite mined in the Cascade area, to subbituminous. Coking bituminous coals are present in the Inner Foothills Belt but, owing to market conditions, they are at present mined mainly in the Cascade and Crowsnest areas. The coal is used for industrial steam-raising and for commercial and household heating. Increasing quantities of coking coal are exported to the United States and Japan for use in the metallurgical industries. In several areas of the foothills, lower rank bituminous non-coking coals are available but production is confined mainly to the Lethbridge area. The other coal areas produce subbituminous coals, used mainly for household and commercial heating and thermal power generation. The three largest producing areas for subbituminous coals are Castor, Drumheller and Sheerness.

Coal production in Alberta decreased 15.2 p.c. in 1961 to 2,027,826 tons, this being about 19.5 p.c. of the nation's coal output. Production has been declining sharply since 1947 when the Leduc oil field was discovered and with the subsequent expansion of the natural gas industry. The 1961 production was about 25 p.c. of that of 1947. Subbituminous coal accounted for about 67 p.c. of the 1961 output and production decreased by 11.6 p.c. The output of bituminous coal decreased 21.7 p.c. to 666,226 tons. Of the total coal production, 47.9 p.c. was won by stripping, the average output per man-day being 14.874 tons compared with 4.826 tons for the underground mines. Bituminous coal was valued at \$7.115 per ton and 27.47 cents per million Btu at the mine, and the average value of subbituminous coal was \$4.210 per ton and 23.39 cents per million Btu.

Of the provincial production, 1.7 p.c. was shipped to Central Canada, nearly 8 p.c. (mainly subbituminous) to Manitoba, 11.5 p.c. to Saskatchewan and 15.9 p.c. to British Columbia. Subvention assistance from the Dominion Coal Board applied on the movement of 758,011 tons of Alberta and British Columbia coal.

The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area and the medium volatile coals of the Crowsnest area, decreased from 45,453 tons in 1960 to 35,195 tons in 1961.

British Columbia and Yukon Territory.—In British Columbia coal was mined in 1961 mainly in the Vancouver Island and Crowsnest Pass (East Kootenay) districts with a small output from the mines in the Nicola-Princeton and Northern districts. These coals

range from high to low volatile bituminous coking coals. Production increased to 964,663 tons, about 9.3 p.c. of the country's output, with an average value of \$6.690 per ton and 24.24 cents per million Btu. About 9 p.c. of the output was from strip mines. The average output per man-day was 28.215 tons for strip mines and 4.678 tons for underground mines.

Beneficiation facilities located at Union Bay (Vancouver Island) and Michel (East Kootenay) process nearly all of British Columbia's coal production. Of the 1961 output, 15 p.c. was shipped to Manitoba, 1.3 p.c. to Ontario, and negligible quantities to Alberta and Saskatchewan. Almost 41 p.c. of the output of coking coal from the Crowsnest area was exported to southwestern United States and Japan for blending in the manufacture of metallurgical coke.

In the Yukon Territory, 7,703 tons of coal were taken from a single underground mine with an average output per man-day of 3.231 tons. This coal was valued at \$14.830 per ton and 64.76 cents per million Btu.

Section 2.—Government Aid to the Mineral Industry

Subsection 1.—Federal Government Aid

The Department of Mines and Technical Surveys.*—The federal Department of Mines and Technical Surveys came into being on Jan. 20, 1950, in the reorganization of the former Department of Mines and Resources. The Department has six branches—Surveys and Mapping Branch, Geological Survey of Canada, Mines Branch, Dominion Observatories, Geographical Branch and, established effective Apr. 1, 1962, the Marine Sciences Branch. The Department's functions include the administration of the Emergency Gold Mining Assistance Act, the Explosives Act and the Canada Lands Act.

Surveys and Mapping Branch.—This Branch provides the base maps required for use in the development of Canada's natural resources, is responsible for legal surveys of federal lands and provides a national system of levelling and precision surveys for use as geodetic control by federal, provincial and private agencies.

The Geodetic Survey provides the original surveys that form the framework or basic control for mapping throughout Canada and for engineering and surveying projects related to natural resources development. Survey stations are established at fairly regular intervals across Canada and are marked by permanent monuments whose latitudes, longitudes and elevations above mean sea level are determined with a high degree of accuracy.

The Topographical Survey provides topographical maps that show all significant natural and artificial features fundamental to the study and economic development of mineral and other natural resources. The Field Survey Section is responsible for the field surveys that provide ground control for mapping from aerial photographs, and the Air Surveys Section plots and produces maps from these aerial photographs. The National Air Photographic Library indexes, preserves and distributes prints of all aerial photography done by or for the Federal Government.

The Legal Surveys and Aeronautical Charts Division makes and records legal surveys of federal Crown lands in the Yukon and Northwest Territories, the National Parks and Indian lands and reserves. This Division prepares aeronautical charts and electoral maps and prepares and distributes flight manuals.

The Map Compilation and Reproduction Division prepares, drafts and reproduces maps, charts and plans for lithographic printing in multi-colour. The work includes the reproduction and photo-reproduction of air chart bases, the reproduction and printing of information for aeronautical charts, the preparation and printing of topographic maps and the reproduction and printing of hydrographic charts.

* Revisited, under the direction of the Deputy Minister, in the Editorial and Information Division, Department of Mines and Technical Surveys, Ottawa.

Marine Sciences Branch.—On Apr. 1, 1962, the Department established a Marine Sciences Branch to combine hydrographic surveys and research in oceanography, marine geology and the geophysical sciences of the seas. The function of the Branch is to carry out hydrographic and other oceanic surveys and to conduct oceanographic research in the nearby oceans, in Canada's coastal and inland waters, and on the underlying seabed, for the threefold purpose of assisting navigation, with particular reference to Arctic waters, of ascertaining the resource potential of the country's continental shelf; and of undertaking the extensive program of oceanographic research required for military and civilian purposes. The resultant information will also greatly assist the commercial fisheries.

The Branch comprises the Canadian Hydrographic Service, the Division of Oceanographic Research and a Ship Division. The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence-Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Division of Oceanographic Research has charge of the extensive program of oceanographic research assigned to the Department in 1960 by the Canadian Committee on Oceanography, an interdepartmental body co-ordinating all oceanographic research in Canada. The Division is responsible for meeting the increasing federal needs for oceanographic information in waters of Canadian interest, mainly for defence, transport and resource assessment purposes. This includes an intensive study of oceanography in the Arctic and the extension of Canadian studies farther out to sea to examine the special problems of the deep ocean. In addition, the Division contributes to international oceanographic studies in which Canada is involved. Hydrographic and oceanographic activity on the Atlantic Coast and in the Arctic is centred in the recently completed Bedford Institute of Oceanography located on the Atlantic Coast near Halifax, N.S. The Institute comprises a modern office and laboratory building, equipment and ships depot, machine woodworking and electrical shops for minor repairs to the ships and the construction of special equipment, and ships' berthing facilities capable of accommodating ten ships. A similar centre is planned for 1965 on the Pacific Coast but, meanwhile, functions on the West Coast are centred in a hydrographic establishment at Victoria, B.C. The Inland Waters Section works out of Ottawa.

The Ship Division was organized in 1962 to be responsible for the management of the fleet of ships and launches which the Branch uses in its work. The majority of these craft are for hydrographic survey; others are multi-purpose ships which are also employed on oceanographic research. Replacement of old and obsolete craft is being provided under a long-range shipbuilding program. The most recent addition to the fleet, *CSS Hudson*, was accepted from the builder in 1963. She is an icebreaker of 4,600 tons displacement with the capability for oceanographic research in any waters of the world, as well as for the latest methods of hydrographic surveying.

Geological Survey of Canada.—The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally (including water supplies), for soil surveys and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas, usually accompanied by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series dealing in a comprehensive way with mineral deposits of a particular type. Information circulars issued in advance of the more detailed reports, contain data of immediate interest to prospectors. Coloured geological maps are issued on various scales from one inch equaling

a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology are issued shortly after the field season ends for those areas where the search for metals or minerals is active. Metallogenic maps show the Canada-wide distribution of known occurrences of particular metals classified according to type of deposit.

The Regional Geology Division is responsible for mapping and studying the rocks of the eastern and western segments of the Precambrian shield, and the Appalachian and Cordilleran regions.

The Economic Geology Division investigates the geology of specific mineral deposits, applies and develops geochemical techniques, and maps and studies unconsolidated deposits that mantle much of the country and, in several provinces, carries out surveys of ground-water resources.

The Fuels and Stratigraphic Geology Division includes stratigraphic palaeontology, the geology of fuels (oil, natural gas and coal), subsurface geology, and research on coal. Its function is to establish the character, age, thickness and correlation of both exposed and concealed sedimentary formations and to map the distribution and structure of these formations with the object of determining the economic possibilities of prospective oil, gas and coal bearing areas of Canada.

The Petrological Sciences Division makes mineralogical, petrological, and isotopic studies of Canadian mineral deposits and associated rocks. Laboratories provide mineral identifications for the public, supply officers of the Survey with mineralogical and geochronological data, and permit research on the genesis of ores, fuels and rocks. Systematic mineral collections are maintained and mineral and rock collections are prepared for use by prospectors and educational institutions.

The Geophysics Division gathers, compiles and interprets geophysical data relating to the geology of Canada. Fundamental research is carried out in some phases of geophysical work.

Mines Branch.—Investigations undertaken in Branch laboratories cover a wide range of technical projects of importance to the advance of fundamental research; to the processing of ores, industrial minerals and fuels on a commercial scale; and to the theory and practice of physical metallurgy.

The Mineral Processing Division is concerned primarily with the development of economical methods of mineral dressing and with research toward the improvement of present processing techniques. It is equipped to conduct laboratory and pilot-plant studies involving a variety of procedures: crushing, grinding, gravity concentration, sink and float (heavy media) separation, magnetic and electrostatic concentration, amalgamation, cyanidation, flotation and roasting.

The Extraction Metallurgy Division seeks the development of better hydrometallurgical and pyrometallurgical processes for the treatment of ores and the solution to specific technical problems in this field. A substantial part of its efforts was devoted recently to ores of uranium, iron and other elements and to corrosion problems encountered in certain industrial and governmental projects. The Division accepts samples from operating mines or those under development.

The Mineral Sciences Division applies the principles of chemistry and physics to fundamental and long-term problems in the field of mineral technology and related aspects of metallurgy. It deals with ores, mineral and metal products, inorganic crystalline materials and radioactive substances, and its work ranges from relatively simple routine determinations to complex research problems requiring the most modern techniques and equipment.

The Fuels and Mining Practice Division studies the properties of fossil fuels in Canada to determine the most efficient means of utilizing fuel resources. Most of the work on coal is directed to investigations on the immediate problems of the industry and to engineering studies on the most efficient use of coal in combustion applications with

particular reference to thermally generated electric power. Such investigations include work on the evaluation of cleaning performance and the beneficiation of coal fines that are difficult to market, the uses of coal in the metallurgical industries and the study of stress phenomena in mining. Research in petroleum is directed mainly to problems in the refining of heavy crudes and high-sulphur bitumens, and to the chemical evaluation of oils and bituminous substances for classification and genetic purposes.

The Physical Metallurgy Division aids the metal industries through the development of new alloys, new manufacturing techniques and new applications and in activities aimed toward improving present practices in metal fabrication. It also conducts fundamental research on the properties and behaviour of metals. The Division serves the Department of National Defence by extensive research and investigative work, concerned broadly with the development of defence materials and prototype equipment and with the metallurgical problems of that Department. It is also operative in the nuclear metallurgy field.

Dominion Observatories.—The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Ottawa and Agincourt, Ont., Meanook, Alta., Victoria, B.C., and at Alert, Mould Bay, Resolute and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Alert, Mould Bay and Resolute, N.W.T., Victoria and Penticton, B.C., Banff, Alta., Saskatoon, Sask., Ottawa, Ont., Seven Falls and Shawinigan, Que., and Halifax, N.S.

The Dominion Observatory at Ottawa is responsible for the time service of Canada which involves nightly astronomical observations of star positions and radio broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory at Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73-inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge. A new radio telescope at Penticton, B.C., has given the Branch a valuable instrument for research in radio astronomy.

Geographical Branch.—The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare. The work is of two kinds—the compilation of geographical material of national significance, and geographical surveys in the field. Land surface conditions, types of vegetation and the structure of towns and cities are typical subjects of investigation. The Branch also administers the Canadian Permanent Committee on Geographical Names.

Mineral Resources Division.—The Division provides a mineral information service that is freely used by government departments, mining and allied industries and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It administers the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected

with the mineral industry. The Division is widely known for its publications, among the most valuable of which are the annual reviews of production, marketing and other matters concerning 64 minerals. It issues more detailed economic studies of metals and fuels of current interest and prepares annual lists of metallurgical works, metal and industrial mineral mines, milling plants, coal mines and petroleum refineries. Also published are special monographs on mining laws, taxation and subjects of particular interest to the mineral industry.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of administering, in accordance with regulations of the Governor in Council, any coal subventions or subsidies voted by Parliament.

The Board is empowered to undertake research and investigations with respect to:—

- (1) the systems and methods of mining coal;
- (2) the problems and techniques of marketing and distributing coal;
- (3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;
- (4) the position of coal in relation to other forms of fuel or energy available for use in Canada;
- (5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;
- (6) the co-ordination of the activities of government departments relating to coal; and
- (7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

The Act authorizes a Board membership of seven, including the chairman. The latter is the Chief Executive Officer, has the status of a Deputy Minister, spends full time on the Board's business, receives a salary and is in charge of a civil service staff. The other members, men of long experience and expert knowledge of aspects and regions of the Canadian coal industry, receive *per diem* payments and travelling expenses while attending Board meetings or while otherwise officially engaged on Board business.

In general, the Board and its staff constitute a central agency through which representations on coal matters are made to the Government from any sector of the industry to the public. Conducting a continuous study of developments and problems within the industry, exchanging information with provincial authorities concerned with coal and with national authorities and agencies in other countries and maintaining the most complete files of Canadian coal information in existence, the Board makes recommendations to the Government and reports to Parliament through the Minister of Mines and Technical Surveys. In view of the growing impact of oil and natural gas on the markets for Canadian coal, the Board and its staff have intensified the study of the relation of the competing sources of energy and of possible new outlets for the solid fuel.

Since its inception, the Board has worked toward the co-ordination of the activities, relating to coal, of various government departments, agencies and other bodies. Its own responsibilities in research on the mining and utilization of coal have been carried out mainly by delegation to the Fuels and Mining Practice Division, Mines Branch, Department of Mines and Technical Surveys. On occasion, the Board has recommended or commissioned specialized types of research by experts outside the government service—for example, the studies resulting in the Christie Reports which became influences leading to the enactment of the Atlantic Provinces Power Development Act (SC 1958, c. 25) and the establishment of a power grid in the Maritimes. As a contribution to the co-ordination

* Revised under the direction of C. L. O'Brien, Chairman of the Dominion Coal Board, Ottawa.

of coal research and to the dissemination to the industry of technical information resulting from research, the Board initiated the now annual Dominion-Provincial Conferences on Coal. In the field of coal statistics, the Board has a long-standing co-operative arrangement with the Dominion Bureau of Statistics under which the Bureau collects most of the statistical information required by the Board.

Government purchases of fuel, which constitute an important outlet for coal, claim a part of the time of the Board's staff in an advisory capacity. Advice on fuel matters is also continuously available to all government departments and agencies. A senior official of the Coal Board is chairman of the Interdepartmental Fuel Committee, which advises on the supply, purchase and utilization of fuel for the Department of National Defence, and of the Dominion Fuel Committee, which is organized along similar lines as an advisory body to other government departments.

The subvention assistance on the movement of Canadian coals, which the Board administers, is authorized from year to year by votes of moneys by Parliament; payments are in accordance with Regulations established by Order in Council. This assistance, which has been provided in varying degrees for the past 30 years, was designed to further the marketing of Canadian coals by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. During the year ended Mar. 31, 1962, a total of 3,274,482 tons of coal was shipped under subvention and \$16,781,253 was paid in assistance. Costs and conditions of the coal industry being subject to variations, the Board must review from time to time the rates of subvention and the areas where the assistance is required.

Coal subventions of another type, based on the Btu content of coal used in thermal electric power production, were authorized in January 1958 by the provisions of the Atlantic Provinces Power Development Act. The Dominion Coal Board was designated as the Government of Canada's administrative agency for subvention matters in agreements made with the provinces under this Act.

As agent to the Minister of Mines and Technical Surveys, the Board receives applications and administers loans under the Coal Production Assistance Act (RSC 1952, c. 173 as amended by SC 1958, c. 36; SC 1959, c. 39; SC 1960-61, c. 20; and SC 1962-63, c. 13). The Board also administers payments under the Canadian Coal Equity Act (RSC 1952 c. 34), which provides a subsidy on Canadian coal used in the manufacture of coke for metallurgical purposes. In the year ended Mar. 31, 1962, payments under this Act totalling \$192,927, were made on 389,751 tons of coal.

Subsection 2.—Provincial Government Aid*

Newfoundland.—The Newfoundland Government, through its Mines Branch provides several valuable services to those interested in prospecting and mining. It publishes, for sale at nominal cost, geological reports, geophysical maps and compilation of general data pertaining to specific areas and makes available, from unclassified files various other information to interested parties. It identifies specimens sent in from Newfoundland and Labrador and assays by chemical means those that appear to have some mineral content. If good specimens from a known area warrant further investigation a geologist from the Department of Mines, Agriculture and Resources is available to visit the locality and give advice. Prospecting and mining permits are issued by the Department and claims are registered.

Nova Scotia.—Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and

* Compiled from material supplied by the respective provincial governments.

levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. The Government is also authorized to assist the mining industry to procure power on the most economical basis and may guarantee the Nova Scotia Power Commission against any loss of revenue incurred on account of capital investments made for that purpose. Mining machinery and equipment to be used in searching for or testing and mining minerals may be made available through the Government. Such equipment is under the direct supervision of the Chief Mining Engineer.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees or loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

New Brunswick.—The Mines Branch of the Department of Lands and Mines has five divisions. The *Mineral Lands Division* administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The *Mine Inspection and Engineering Division* administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and all equipment used in mines must be approved by the Division. The *Geological Division* carries on general and detailed geological mapping and investigation. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The *Mine Assessment Division* is responsible for the collection of mining taxes and royalties and the preparation of statistics on mineral production. The *Bathurst Division* serves as recording office for northeastern New Brunswick. In addition, claim maps as well as topographical, geological and aero-magnetic maps are available for perusal and distribution. The staff is prepared to provide information concerning the Mining Act and the use of various types of maps.

Quebec.—The Mining Act (RSQ 1941, c. 196) authorizes the Department of Natural Resources of the Province of Quebec to build, maintain and improve roads needed for mining development. Such work is done by contract under the supervision of departmental engineers. The Act gives the Department considerable latitude in this respect. Certain major roads have been built to new mining districts and completely paid for; on the other hand, if a particular property requires a branch road from an established highway the owner may be required to contribute a portion of the cost. To prevent the development of uncontrolled settlements in the vicinity of operating mines, the Department regulates the use of land and permits the establishment of well organized communities.

The Department maintains well equipped laboratories for the benefit of prospectors, geologists, engineers and mine operators. The facilities include equipment for mineralogy, spectrography, ore dressing, and analysis by wet or dry assay, spectrography or X-ray. Qualitative and mineralogical determinations are made free of charge but quantitative analyses are charged for according to a tariff schedule. The Mining Act provides free samples to be used by prospectors in paying for such analyses. The province has authorized the establishment of research laboratories and a pilot plant to assist mining and metallurgical enterprises in the processes and techniques of extracting, transforming and utilizing ores.

Two branches of the Department undertake geological mapping and inspection—one responsible for reconnaissance (areal) mapping, and the other for detailed mapping in

mining districts and inspection of individual deposits or properties. The published reports on these investigations are available on request. When weather permits, about 40 crews, headed by geologists or mining engineers, work in different regions of the province. In five mining areas, offices managed by resident geologists are maintained where geological information obtained from mining explorations is gathered and compiled and from which free copies of such documentation may be obtained by the public. Furthermore, four other crews are engaged in hydrogeological surveying, mainly for the purpose of assisting municipalities in resolving their water supply problems.

Departmental inspectors supervise the observance of all regulations concerning the safety of workmen in operating mines. Three Mobile Mine Rescue Stations are operated and a mine rescue training program conducted.

Five-week courses for the training of prospectors are conducted by Laval and Montreal Universities, and lectures are given at different localities throughout the province. University scholarships are granted each year to deserving undergraduate and postgraduate students in mining, geology and metallurgy, thus contributing to the training of qualified engineers for the benefit of the mining industry.

Ontario.—The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province, as briefly outlined below.

Mining Lands Branch.—This Branch handles all matters dealing with the recording of mining claims, assessment work, etc., and the preparation of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date showing lands open for staking and recorded and patented claims therein. District Mining Recorders maintain offices at strategic locations throughout the province.

Geological Branch.—A continuing program of geological mapping and investigation is carried out by the geological staff of the Department. Detailed reports and geological maps of the areas studied are made available to the public. In many of the active areas of the province resident geologists are engaged to gather and make available to the public information concerning geological conditions, exploration and development within the respective districts. A geologist specializing in industrial minerals investigates methods of treatment and recovery of such minerals and compiles data on the uses, specification and markets for such products. Collection and dissemination of information on ground water resources is also a function of the Geological Branch. During the winter months courses of instruction for prospectors are held in various centres throughout the province.

Laboratories Branch.—The Provincial Assay Office at Toronto carries out wet analyses and assays of metal and rock constituents on a custom fee basis and gives the same service free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The Timiskaming Testing Laboratories situated at Cobalt, in addition to performing fire assays and chemical analyses, operate a bulk sampling plant mainly to assist the producers of the area in the marketing of the cobalt-silver ores. Cable Testing Laboratory, wherein all hoisting ropes in use at the mines are periodical tested, is operated under the supervision of the Inspection Branch.

Inspection Branch.—The main function of this Branch is the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Branch.

Exhibitions.—The Department each year presents displays pertaining to mining within the province at such exhibitions as the Canadian National at Toronto and at other centres from time to time.

Publications Branch.—All maps and reports of the Department are distributed through the agency of the Publications Branch located at the main office of the Department.

Library.—A mining library for the use of the Department and the public is maintained within the Department. This library stocks mainly publications and maps issued by the federal and provincial governments of Canada as well as numerous periodicals and bulletins published in the United States.

Roads to Resources Program.—An interdepartmental committee was set up in 1955 to decide on matters of policy and to determine the locations and priorities of proposed roads. The Minister of Mines sits on this committee with the Provincial Treasurer and the Ministers of Lands and Forests and of Highways. The Department of Highways supervises the construction of all access roads. The sum of \$1,500,000 a year is made available for such projects, provided on a 50-50 basis by the Ontario Government and the Federal Government.

Manitoba.—The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences.

Manitoba also aids the mining industry by the construction of access roads to mining districts.

Saskatchewan.—Assistance to the mining industry in Saskatchewan is administered by the Mines Branch, Department of Mineral Resources, with its head office at Regina. The Branch is headed by a Director and comprises three divisions.

The Geology Division is directed by the Chief Geologist and maintains resident geologists in or near the principal mining areas. The Division conducts a prospectors' school which gives basic training in geology, mineralogy, prospecting and exploration techniques and administers the Prospectors' Assistance Plan which assists by lending equipment, paying certain transportation costs, paying for a grub-stake, and by providing technical advice. During the summer months, geological crews survey and map areas and prepare reports which are made available to the public.

The Engineering Division administers the Mines Regulation Act, the purpose of which is to ensure safe working conditions in mines. Inspections of mines are carried out by Division officers, a Chief Engineer of Mines stationed at Regina, and an Inspector of Mines stationed at Uranium City. Safety education is also part of the Division's work, taking the form of first aid instruction, mine rescue training, and analysis of accidents.

The Mining Lands Division is responsible for making disposition of all Crown minerals with the exception of petroleum, natural gas and helium, and maintains records respecting areas let out by lease, permit or claim. Recording offices, having the responsibility of assisting the public in determining the lands available and accepting applications, are located at Regina, Prince Albert, La Ronge, Uranium City and Flin Flon.

Alberta.—Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and trains mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture. (See also p. 377.)

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special deductions provided for in the Alberta Corporation Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia.—The Department of Mines and Petroleum Resources of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by departmental engineers and geologists; grub-stakes, limited to a maximum of \$700, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

Section 3.—Mining Legislation

Federal Mining Laws and Regulations.—The Federal Government administers mining laws in the Yukon Territory, the Northwest Territories, and certain other lands vested in the Crown in the right of Canada. The Yukon Quartz and Placer Mining Acts and the Canada Mining Regulations which are applicable to the Northwest Territories and other Crown lands are administered by the Resources Division, Northern Administration Branch, Department of Northern Affairs and National Resources. Minerals underlying federal land under grants are reserved to the Crown, and mining rights may be acquired by staking mineral claims under the appropriate Acts or Regulations. Twenty-one-year leases of claims may be issued and these leases may be renewed. The disposal of mineral rights underlying Indian reservations is subject to the consent of the Indians occupying the reserve and to the treaties relating thereto.

The Northwest Territories Quartz Mining Regulations were replaced by the Canada Mining Regulations, Mar. 3, 1961. The new Regulations provide for the exploration and development of minerals in the Northwest Territories and for the exploration and development of minerals underlying territorial waters of Canada and lying outside any of the

provinces and the Yukon Territory. The revised Regulations require a prospector's licence to enter, locate and prospect on lands subject to the Regulations. However, a prospector's licence is not required to maintain claims in good standing.

Any individual over 18 years of age or any joint stock company incorporated or licensed to do business in Canada may hold a prospector's licence. Claim tenure is limited to ten years from the date of recording. At the end of ten years, the claim owner must apply for a lease or relinquish his rights. No lease will be granted to an individual unless the Minister of Northern Affairs and National Resources is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease; no lease will be granted to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation.

Any new mine beginning production after the Canada Mining Regulations came into force will not be required to pay royalties for a period of 36 months, starting from the day the mine comes into production.

Oil and Gas Legislation.—The Federal Government administers oil and gas laws and regulations in the Yukon and Northwest Territories, through the Resources Division, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa. All land in both Territories is, in the first instance, owned by the Federal Government, complete with under-rights. These include oil and gas rights. When title to land is granted by letters patent, surface rights only are conveyed and under-rights continue to be vested in the Federal Government, which may dispose of them under appropriate legislation. Nine-year to 12-year permits to explore for oil and gas and 21-year oil and gas leases are available.

The Government has set up the Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations, both dated June 6, 1961. They also include provisions for the exploration, development and production of oil and gas from land under all sea-coast waters of Canada which are not within any province.

An oil and gas exploration permit may be issued to any individual over 21 years of age or to any joint stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. Permits are issued in periods of nine, 10 or 12 years, depending on the location, by which times the permittee is expected to apply for an oil and gas lease or relinquish his rights. No oil and gas lease will be issued to an individual unless the Minister of Northern Affairs and National Resources is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease, or to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are beneficially owned by persons who are Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange, and that Canadians will have the opportunity of participating in the financing and ownership of the corporation.

Provincial Mining Laws and Regulations.*—All Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves and National Parks which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments.

The granting of land in any province except Ontario and Nova Scotia no longer carries its mining rights upon or under such land. In Ontario mineral rights are expressly reserved if they are not to be included. In Nova Scotia no mineral rights belong to the owner of the land except those pertaining to gypsum, limestone, and building materials, and the Governor in Council may declare deposits of either limestone or building

* Compiled from material supplied by the provincial governments.

materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be separately obtained by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

Placer.—In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General Minerals.—These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia the most elaborate laws and regulations apply in this division. In all provinces except Alberta and Saskatchewan, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a specified size may then be staked. In Saskatchewan, a licence is required only for staking and any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years; in Saskatchewan there is no work commitment in the first year of the claim. There is no time limit in British Columbia but \$500 assessment work, of which a survey may represent two fifths, must be performed and recorded before a lease may be obtained. In Quebec, a specified number of man-days of work must be performed and the excess may be carried forward for renewal of licence; before mining can be commenced, a mining concession must be purchased for which it is necessary to produce an engineer's report indicating the presence of an orebody. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Newfoundland, the provincial mining tax was modified after Confederation on Mar. 31, 1949 to conform with the provincial obligations under the Dominion-Provincial Tax Agreement. No other form of taxation or royalty exists. In Saskatchewan, subsurface mineral regulations covering non-metallies stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

Fuels.—In provinces where coal occurs the size of holdings is laid down, together with the conditions of work and rental under which they may be held. In Quebec, ordinary mining claims give rights to all mineral substances and to their development, and stakings for combustible natural gas, salt, coal, mineral oil or naphtha, or iron sands may cover 1,280 acres per claim. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba, Saskatchewan and Alberta, exploration costs are applicable in part on the first year's lease rental. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying.—Regulations under this heading define the size of holdings and the terms of lease or grant. On Quebec private lands the quarry belongs to the owner; on Crown lands mineral rights belong to the Crown and may be obtained in accordance with the provisions of the law although the rights to exploit peat or marl must be obtained by special licence. In Saskatchewan, sand and gravel belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

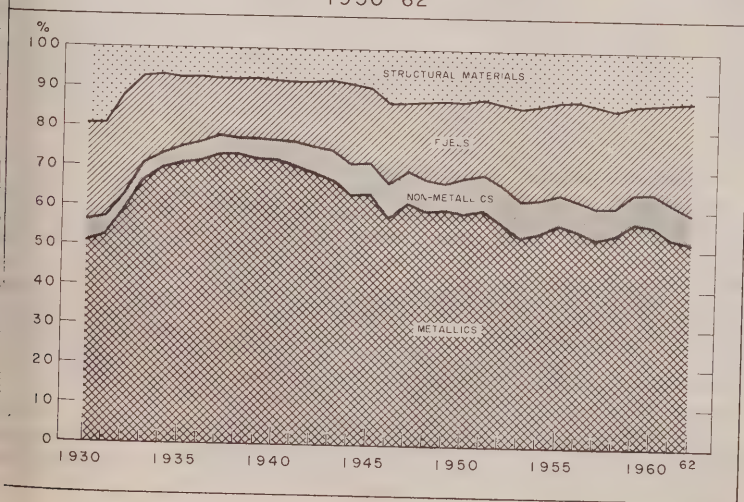
Section 4.—Statistics of Mineral Production

Subsection 1.—Value and Volume of Mineral Production

Statistics of the annual value of mineral production are available from 1886, total production being shown for five-year intervals from that date to 1945 and annually for subsequent years in Table 3. These figures are not strictly comparable throughout the period because of minor changes in methods of computing metallic content of ores sold and valuations of products but they do serve to show broad trends in the mineral industry.

The increase in the value of mineral production since the end of World War II has been phenomenal, having more than tripled since 1949. Production per head of the population advanced from \$67.01 in that year to \$153.10 in 1962. Although part of this increase was accounted for by advanced prices, the index of the volume of output from Canadian mines recorded an advance from 90.0 (1949 = 100) to 286.5 in the same comparison.

PROPORTION OF TOTAL VALUE OF MINERAL PRODUCTION CONTRIBUTED BY
METALLICS, NON-METALLICS, FUELS AND STRUCTURAL MATERIALS,
1930-62



3.—Value of Mineral Production, 1886-1962

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Value per Capita
	\$	\$		\$	\$		\$	\$
1886.....	10,221,255	2.23	1935 ¹	312,344,457	28.80	1953.....	1,336,303,503	90.40
1890.....	16,763,353	3.51	1940.....	529,825,035	46.55	1954.....	1,488,382,091	96.59
1895.....	20,505,917	4.08	1945.....	498,755,181	41.32	1955.....	1,795,310,796	114.37
1900.....	64,420,877	12.15	1946.....	502,816,251	40.91	1956.....	2,084,905,554	129.35
1905.....	69,078,999	11.51	1947.....	644,899,975	51.38	1957.....	2,190,322,392	132.03
1910.....	106,823,623	15.29	1948.....	820,248,865	63.97	1958.....	2,100,739,038	122.99
1915.....	137,109,171	17.18	1949 ²	901,110,026	67.01	1959.....	2,409,020,511	137.79
1920.....	227,859,665	26.63	1950.....	1,045,450,073	76.24	1960.....	2,492,509,981	139.48
1925.....	226,583,333	24.38	1951.....	1,245,483,595	88.33	1961.....	2,582,300,387	141.59
1930.....	279,873,578	27.42	1952.....	1,285,342,353	89.07	1962 ²	2,842,984,195	153.10

¹ Beginning with 1935, exchange equalization on gold production is included.
² Value of Newfoundland production included from 1949.

4.—Value of Mineral Production of Canada, by Classes, 1953-62

Year	Metallics	Non-metallics	Fuels	Structural Materials	Total
	\$	\$	\$	\$	\$
1953.....	709,920,510	124,999,607	314,181,168	187,202,218	1,336,303,503
1954.....	802,401,423	128,038,507	352,959,465	204,982,696	1,488,382,091
1955.....	1,007,839,501	144,920,841	414,318,015	228,232,439	1,795,310,796
1956.....	1,146,349,595	160,341,599	518,761,191	259,453,169	2,084,905,554
1957.....	1,159,579,226	169,061,110	564,776,791	296,905,265	2,190,322,392
1958.....	1,130,160,395	150,354,802	510,768,681	309,455,160	2,100,739,038
1959.....	1,370,648,535	178,216,641	535,577,823	324,577,512	2,409,020,511
1960.....	1,406,558,061	197,505,783	565,851,829	322,594,308	2,492,509,981
1961.....	1,387,159,036	210,467,786	653,327,802	331,345,763	2,582,300,387
1962 ²	1,480,282,362	215,584,368	796,851,086	350,266,379	2,842,984,195

Current Production.—A detailed review of developments in mining during 1962 is given at pp. 521-545. As stated there, the value of mineral commodities produced in that year reached a new high, amounting to nearly \$2,843,000,000, a total more than 10 p.c. above the 1961 value. Major gains continued to be made by petroleum, nickel, natural gas and natural gas by-products, increases amounting to \$96,033,000, \$33,963,000, \$29,491,000 and \$19,525,000, respectively. The value of iron ore produced, which increased by \$12,868,000 in 1961, rose by \$76,658,000 in 1962. Copper output, which had dropped by \$9,689,000 in 1961, showed an increase of \$27,976,000 in 1962. The value of cement produced in 1962 was \$9,940,000 higher than in the previous year, that of zinc \$5,879,000 higher and that of asbestos \$3,105,000 higher. Also, the first of a continuing output of potash added \$2,121,000 to the total value of mineral production. The greatest decline was recorded by uranium which dropped \$44,000,000 below its 1961 level.

The value of all metals produced had shown a slight drop in 1961 mainly as a result of decreases in copper, zinc and uranium but in 1962 reached an all-time high, increasing 7 p.c. over the previous year. The total values of other sectors were also at record levels, non-metallics increasing 2 p.c., fuels 22 p.c. and structural materials 6 p.c.

5.—Quantity and Value of Mineral Production, 1960-62

Mineral	1960		1961		1962*	
	Quantity	Value \$	Quantity	Value \$	Quantity	Value \$
Metallics		1,406,558,061		1,387,159,036		1,480,282,362
Antimony.....lb.	1,651,786	538,482	1,331,297	469,943	1,819,876	642,416
Bismuth....."	423,827	762,048	478,118	967,625	375,345	739,705
Cadmium....."	2,357,497	3,347,646	1,357,874	2,172,598	2,153,448	3,703,931
Calcium....."	134,801	159,241	99,355	100,881	104,850	102,438
Cobalt....."	3,568,811	6,763,016	3,182,897	4,751,543	3,441,746	6,382,502
Columbium (Cb ₂ O ₅).."	—	—	62,229	65,619	967,000	953,756
Copper....."	878,524,096	264,846,637	878,175,084	255,157,626	917,180,648	283,133,249
Gold.....oz.t.	4,628,911	157,151,527	4,473,699	158,637,366	4,155,210	155,446,407
Indium....."	—	—	—	—	—	—
Iron ore.....ton	21,550,830	175,082,523	20,359,003	187,950,047	27,898,713	264,608,450
Iron, remelt....."	—	10,972,979	—	14,720,064	—	7,035,921
Lead.....lb.	411,300,451	43,926,888	460,869,392	47,054,765	381,217,587	37,816,785
Magnesium....."	14,577,138	4,313,987	15,270,618	4,307,570	16,469,917	4,611,576
Molybdenum....."	767,621	1,015,380	771,368	1,092,201	797,452	1,228,672
Nickel....."	429,012,707	295,640,279	465,982,868	751,261,720	464,136,039	385,224,707
Platinum metals.....oz. t.	483,604	28,873,508	418,278	24,534,349	453,526	28,055,528
Selenium.....lb.	521,638	3,651,466	430,612	2,798,978	506,015	2,799,929
Silver.....oz. t.	34,016,829	30,244,363	31,381,977	29,550,651	29,955,465	34,897,604
Tellurium.....lb.	44,682	156,388	77,609	376,404	61,211	367,466
Thorium....."	—	—	—	—	—	—
Tin....."	621,718	522,243	1,119,350	727,578	688,414	447,469
Titanium ore.....ton	2,947	16,265	—	—	—	—
Uranium (U ₃ O ₈).....lb.	25,495,369	209,938,192	19,281,465	195,691,624	16,862,823	151,425,006
Zinc....."	813,745,341	108,635,003	832,008,584	104,749,879	914,287,984	110,628,815
non-metallics		197,505,783		210,467,786		215,584,368
Arsenious oxide.....lb.	1,724,326	70,400	419,300	16,772	186,250	7,950
Asbestos.....ton	1,118,456	121,400,015	1,173,695	128,955,900	1,223,509	132,060,710
Barite....."	154,282	1,462,212	191,404	1,799,119	229,271	2,165,862
Diatomite....."	44	1,430	214	8,817	62	2,468
Feldspar....."	13,862	239,273	10,507	229,626	10,000	220,000
Fluorspar....."	—	1,921,820	—	1,990,200	—	1,870,184
Garnet....."	32	4,480	80	3,200	50	2,000
Graphite....."	—	—	1	146	—	—
Grindstone....."	10	2,000	10	2,000	10	2,000
Gypsum....."	5,205,731	9,498,711	4,940,037	7,750,748	5,183,911	9,033,148
Iron oxides....."	909	76,780	808	68,199	821	61,332
Lithia.....lb.	204,666	84,135	536,190	392,871	484,500	650,000
Magnesian dolomite and breccia.....ton	—	3,279,021	—	3,061,403	—	3,395,824
Mica.....lb.	1,702,605	94,203	1,816,160	125,377	1,525,300	100,868
Mineral waters.....gal.	376,425	201,764	364,933	208,709	367,000	212,800
Nepheline syenite.....ton	240,636	2,891,095	240,320	2,572,169	281,100	3,383,700
Peat moss....."	185,784	6,088,138	224,031	7,295,087	232,445	7,669,367
Potash, (K ₂ O)....."	—	178,700	—	—	—	2,121,073
Pozzolana....."	—	—	—	2,000	—	5,000
Pyrite, pyrrhotite....."	1,032,288	3,316,378	517,258	1,830,566	532,082	1,703,225
Quartz....."	2,260,746	3,296,705	2,194,054	3,152,882	2,010,104	3,556,724
Salt....."	3,314,920	19,355,658	3,246,527	19,552,006	3,606,811	23,185,423
Soapstone, talc and pyrophyllite....."	41,636	523,181	48,116	690,630	46,794	674,910
Sodium sulphate....."	214,208	3,449,155	250,996	4,076,625	250,739	4,040,000
Sulphur in smelter gas....."	289,620	2,854,623	277,056	2,708,110	286,566	2,777,262
Sulphur, elemental....."	274,259	4,298,906	394,762	7,287,881	668,126	8,903,209
Titanium dioxide, etc....."	—	12,947,000	—	18,723,743	—	7,779,329
fuels		565,851,829		653,327,802		796,851,086
Coal.....ton	11,011,138	74,676,240	10,397,704	70,052,693	10,257,892	68,527,159
Natural gas.....Mcf.	522,972,327	52,196,882	655,737,644	68,421,918	955,526,300	97,912,950
Natural gas by-products....."	—	—	—	—	—	—
Petroleum, crude.....bbl.	189,534,221	16,052,210	220,848,080	27,292,059	244,007,849	46,818,065
Natural Materials		322,594,308		331,345,763		350,266,379
Clay products (brick, tile, etc.)....."	—	—	—	—	—	—
Concrete.....ton	5,787,225	93,251,473	6,205,948	103,923,644	6,789,229	37,738,098
Gravel....."	1,529,568	19,301,790	1,415,290	19,217,371	1,380,624	113,864,118
Stone and gravel....."	192,074,498	111,163,886	170,750,947	104,654,132	167,328,097	118,223,032
Stone....."	45,359,449	60,640,621	48,938,804	66,567,668	45,270,476	62,808,131
Grand Totals		2,492,509,981		2,582,300,387		2,842,984,195

Analysis of Current Value and Volume.—To present a clearer and simpler interpretation of the trends in mineral production in Canada over the ten years 1953-62, the percentage of the total value contributed by each principal mineral in each year is given in Table 6.

6.—Percentage of the Total Value Contributed by Principal Minerals, 1953-62

Mineral	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962 ^p
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Metallics¹	53.1	53.7	56.1	54.9	52.9	53.8	56.9	56.4	52.7	52.1
Copper.....	11.3	11.8	13.4	14.1	9.4	8.3	9.7	10.6	9.9	10.0
Gold.....	10.4	10.0	8.7	7.3	6.8	7.4	6.2	6.3	6.1	5.5
Iron ore.....	6.2	6.2	6.2	7.6	7.6	6.0	8.0	7.0	7.3	9.2
Lead.....	3.7	3.9	3.2	2.8	2.3	2.0	1.6	1.8	1.8	1.3
Nickel.....	12.0	12.1	12.0	10.8	11.8	9.2	10.7	11.9	13.6	13.6
Platinum metals.....	1.5	1.4	1.3	1.1	1.2	0.7	0.5	1.2	0.9	0.0
Silver.....	1.8	1.7	1.4	1.2	1.1	1.3	1.2	1.2	1.1	1.2
Uranium.....	—	1.8	1.4	2.2	6.2	13.3	13.7	10.8	7.6	5.3
Zinc.....	7.2	6.1	6.6	6.1	4.6	4.4	4.0	4.4	4.1	3.9
Non-metallics¹	9.4	8.8	8.1	8.3	7.7	7.2	7.4	7.9	8.2	7.6
Asbestos.....	6.4	5.8	5.4	5.3	4.8	4.4	4.5	4.9	5.0	4.6
Gypsum.....	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3
Quartz.....	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salt.....	0.5	0.6	0.6	0.7	0.6	0.7	0.7	0.8	0.8	0.8
Sulphur in smelter gas.....	0.2	0.3	0.3	0.4	0.1	0.2	0.1	0.1	0.1	0.1
Sulphur, elemental.....	—	—	—	—	—	—	0.1	0.2	0.3	0.3
Titanium dioxide, etc.....	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.5	0.6	0.3
Fuels	23.5	23.7	23.1	24.9	25.8	24.3	22.2	22.7 ¹	25.3 ¹	28.0
Coal.....	7.7	6.5	5.2	4.6	4.1	3.8	3.1	3.0	2.7	2.4
Natural gas.....	0.8	0.8	0.9	0.9	1.0	1.5	1.6	2.1	2.6	3.4
Petroleum.....	15.0	16.4	17.0	19.4	20.7	19.0	17.5	17.0	18.9	20.5
Structural Materials	14.0	13.8	12.7	11.9	13.6	14.7	13.5	12.9	12.8	12.3
Clay products.....	2.2	2.2	2.0	1.8	1.6	2.0	1.8	1.5	1.4	1.3
Cement.....	4.4	4.0	3.6	3.8	4.3	4.6	4.0	3.7	4.0	4.4
Lime.....	1.1	1.0	0.9	0.7	0.8	0.9	0.9	0.8	0.7	0.6
Sand and gravel.....	4.0	4.0	3.8	3.5	4.2	4.6	4.3	4.5	4.1	4.2
Stone.....	2.3	2.6	2.4	2.1	2.7	2.6	2.5	2.4	2.6	2.2
Grand Totals	100.0	100.0	100.0	100.0	100.9	100.0	100.0	100.0	100.0	100.0

¹ Includes minor items not specified.

With 1949 production levels equalling 100,* the total quantity of mineral output had reached an all-time high of 286.5 in 1962, an increase of 7.3 p.c. over the previous year. The most significant gains were recorded in the iron ore, asbestos, natural gas and crude petroleum industries, with lesser gains in copper and nickel. Declines occurred in gold, coal and uranium (not shown).

* For a description of this index, as well as one for manufacturing and electric power and gas utilities, see DB Reference Paper *Revised Index of Industrial Production, 1935-1957 (1949=100)* (Catalogue No. 61-502). To update these series and others in the Index of Industrial Production, see DBS monthly report *Index of Industrial Production (1949=100)* (Catalogue No. 61-005).

7.—Indexes of the Volume of Production of the Principal Mining Industries, 1953-62
(1949=100)

Mineral	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Metallics	115.7	129.0	142.7	151.0	170.0	180.3	201.3	197.9	191.7	195.5
Copper ¹	96.1	114.8	123.7	135.2	137.1	131.8	151.6	168.7	170.4	177.7
Gold ¹	98.5	105.8	110.2	107.9	105.7	109.7	108.4	111.2	107.1	100.0
Nickel ¹	111.7	125.3	135.9	139.0	148.8	110.2	144.8	166.9	183.8	184.1
Iron ore.....	170.6	185.4	316.5	418.6	462.6	321.5	448.9	406.3	504.7	604.1
Non-metallics	152.9	161.4	180.2	187.6	179.0	171.1	191.4	192.6	211.7	222.2
Asbestos.....	162.3	167.8	191.9	188.4	184.3	178.3	193.5	201.4	223.4	231.1
Fuels	192.7	215.6	273.2	344.7	358.2	329.5	363.1	350.2	430.7	480.0
Coal.....	81.5	75.2	74.1	76.6	65.4	56.7	51.9	53.3	49.9	48.1
Natural gas.....	147.8	169.6	204.5	235.0	295.1	401.6	503.9	589.2	712.0	1,001.0
Petroleum.....	385.5	457.8	616.8	812.7	859.5	782.6	873.7	909.9	1,043.7	1,154.4
Total Mining	142.1	158.7	185.2	212.3	227.8	227.0	251.1	253.3	266.9	286.5

¹ Based on commodity data.

Subsection 2.—Provincial Distribution of Mineral Production

Changes in provincial mineral production in 1962 compared with 1961 varied across Canada. The major advance was shown by Alberta where large increases in the output of natural gas, natural gas by-products and petroleum as well as a substantial increase in the output of sulphur were mainly responsible for an increase of \$105,300,000 in total value of production. Quebec's total advanced by \$63,600,000 as a result of much greater shipments of iron ore and higher production of other base metals. Larger shipments of nickel from the new Thompson development were mainly responsible for the increase of \$58,500,000 experienced by Manitoba. In British Columbia, substantial increases in the value of output of copper, iron ore, natural gas and crude petroleum more than counterbalanced decreases in other minerals, resulting in an advance of some \$41,000,000. Saskatchewan's first production of potash and an increased output of crude petroleum advanced the value of its total output to the extent of about \$20,600,000. Only Ontario among the provinces showed a reduction in value of output, the decrease amounting to about \$41,500,000. This was more than accounted for by lower shipments of nickel as a result of a production cut-back in the latter part of the year and by the expected drop in the output of uranium. Increases in the Atlantic Provinces and the Yukon Territory were moderate but the Northwest Territories recorded a slight decrease as a result of the closing of the Rankin nickel mine.

In 1962, Ontario produced 31.7 p.c. of the total value of the mineral output of the country compared with 36.5 p.c. in 1961 and 39.4 p.c. in 1960. Total value of production in the province dropped by nearly 9 p.c. in the two latest years. Alberta, which moved to second place in 1961, produced 20.4 p.c. of the nation's output in 1962 compared with 18.3 p.c. and 15.9 p.c., respectively, in the two preceding years. Quebec, in third place, recorded an advance of over 11 p.c. in value of output in 1962 and produced 18.3 p.c. of the nation's total compared with 17.6 p.c. in 1961 and 17.9 p.c. in 1960. Saskatchewan, British Columbia and Manitoba followed Quebec in value of mineral output in 1962, producing, respectively, 8.3 p.c., 8.1 p.c. and 5.6 p.c. of the Canadian total; Manitoba's share increased from 3.9 p.c. in 1961 and 2.4 p.c. in 1960. In 1962, Newfoundland produced 3.5 p.c. of the Canadian total and the Maritime Provinces together produced 3.1 p.c., not greatly changed from previous years.

8.—Value of Mineral Production, by Province, 1953-62

NOTE.—Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	\$	\$	\$	\$	\$	\$	\$
1953.....	33,780,622	—	67,364,408	11,663,618	251,881,781	465,877,093	25,264,112
1954.....	42,898,033	—	73,450,898	12,468,322	278,818,070	496,747,571	35,106,922
1955.....	68,462,956	—	67,133,539	15,759,744	357,010,045	582,954,682	62,018,231
1956.....	84,349,006	—	66,092,274	18,258,302	422,464,410	650,823,362	67,909,407
1957.....	82,682,263	—	68,058,743	23,120,689	406,055,757	748,824,322	63,464,285
1958.....	64,994,754	—	62,705,891	16,275,971	385,705,489	789,601,868	57,217,569
1959.....	72,156,996	4,559,171	62,879,647	18,133,290	440,897,186	970,762,201	55,512,410
1960.....	86,637,123	1,172,587	65,453,531	17,072,739	446,202,726	983,104,412	58,702,697
1961.....	91,618,709	608,644	61,693,156	18,804,385	455,522,933	943,669,456	101,489,787
1962 ^p	98,261,813	796,043	62,859,039	24,904,991	519,145,596	902,133,708	159,038,359

	Saskatchewan	Alberta	British Columbia	Northwest Territories	Yukon Territory	Canada
	\$	\$	\$	\$	\$	\$
1953.....	48,081,970	248,863,295	158,487,812	10,300,230	14,738,562	1,336,303,503
1954.....	68,216,009	279,042,735	158,630,867	26,414,000	16,588,664	1,488,382,091
1955.....	85,160,128	325,974,326	189,524,574	25,597,821	14,724,750	1,795,310,796
1956.....	122,744,698	411,171,898	203,277,828	22,157,935	15,656,434	2,084,905,554
1957.....	173,461,037	410,211,763	178,931,120	21,400,615	14,111,798	2,190,322,392
1958.....	209,940,966	345,939,248	151,149,136	24,895,390	12,310,756	2,100,739,038
1959.....	210,042,051	376,215,593	159,395,092	25,874,496	12,592,378	2,409,020,511
1960.....	212,093,225	395,344,010	168,261,646	27,135,087	13,330,198	2,492,509,981
1961.....	215,977,233	473,480,540	188,542,078	18,145,162	12,750,304	2,582,300,387
1962 ^p	236,577,640	578,821,732	229,427,347	17,701,145	13,316,782	2,842,984,195

9.—Detailed Mineral Production, by Province, 1961 with Preliminary Totals for 1962

Mineral	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	CANADA	
												1961	1962P
Metallics \$	85,883,928	—	—	—	214,235,929	780,784,843	73,217,673	75,143,941	6,080	129,852,883	30,033,759	1,387,159,036	1,480,282,362
Antimony..... lb.	—	—	—	—	—	—	—	—	—	1,331,297	—	1,331,297	1,819,876
Bismuth..... lb.	—	—	—	—	—	—	—	—	—	469,948	—	469,948	642,416
— \$	—	—	—	—	—	—	—	—	—	478,118	—	478,118	375,345
Cadmium..... lb.	—	—	—	—	174,832	19,923	—	—	—	283,363	—	283,363	739,705
— \$	—	—	—	—	297,670	22,388	—	—	—	637,567	—	637,567	2,153,448
Calcium..... lb.	—	—	—	—	—	—	182,622	125,135	—	142,685 ¹	—	1,357,874	3,705,931
— \$	—	—	—	—	—	—	292,195	200,216	—	907,432	—	2,172,598	104,850
Cobalt..... lb.	—	—	—	—	—	99,355	—	—	—	1,451,891	—	99,355	102,438
— \$	—	—	—	—	—	100,881	—	—	—	—	—	100,881	3,182,897
Columbium (Cb ₂ O ₅)..... lb.	—	—	—	—	—	2,884,420	298,477	—	—	—	—	3,182,897	3,441,746
— \$	—	—	—	—	—	4,309,912	441,631	—	—	—	—	4,751,543	6,382,502
Copper..... lb.	—	—	—	—	62,229	—	—	—	—	—	—	62,229	967,000
— \$	—	—	—	—	65,619	—	—	—	—	—	—	65,619	953,756
Gold..... oz.t.	31,403,313	—	—	—	298,013,711	423,293,547	24,908,723	66,957,929	—	31,690,608	1,807,253 ²	878,175,084	917,180,648
— \$	9,195,817	—	—	—	86,990,202	122,421,860	7,271,252	19,545,019	—	9,205,938	527,538 ²	255,157,626	283,133,249
Indium..... oz.t.	14,429	—	—	—	1,054,029	2,637,720	7,577,747	70,784	171	164,467	473,352 ²	4,473,699	4,155,210
— \$	511,652	—	—	—	37,375,868	93,533,551	2,047,709	2,510,000	6,064	5,832,000	16,820,522 ²	158,637,366	155,446,407
Iron ore..... ton	7,611,340	—	—	—	5,639,031	5,772,664	—	—	—	1,335,068	—	20,359,003	27,898,713
— \$	50,889,125	—	—	—	53,627,608	62,350,773	—	—	—	12,082,541	—	187,950,047	264,608,450
Iron, remelt..... ton	—	—	—	—	14,720,064	—	—	—	—	—	—	14,720,064	7,035,921
Lead..... lb.	43,036,710	—	—	—	6,784,464	1,670,535	6,107,331	—	—	385,600,537	16,763,815 ¹	460,889,392	281,217,857
— \$	4,485,638	—	—	—	662,694	1,170,552	623,558	—	—	39,369,815	1,713,108 ¹	47,084,765	37,816,785
Magnesium..... lb.	—	—	—	—	—	15,270,618	—	—	—	—	—	15,270,618	16,469,917
— \$	—	—	—	—	—	4,307,570	—	—	—	—	—	4,307,570	4,611,576
Molybdenum..... lb.	—	—	—	—	771,358	—	—	—	—	—	—	771,358	797,452
— \$	—	—	—	—	1,092,201	—	—	—	—	—	—	1,092,201	1,228,872
Nickel..... lb.	—	—	—	—	392,435,773	65,957,008	—	—	—	4,180,677	3,400,410 ¹	465,982,868	464,135,032
— \$	—	—	—	—	295,423,149	50,039,745	—	—	—	3,194,037	2,603,786 ¹	331,291,730	386,453,707
Platinum metals..... oz.t.	—	—	—	—	—	418,278	—	—	—	—	—	331,418,278	386,453,707
Selenium..... lb.	—	—	—	—	24,534,349	—	—	—	—	—	—	24,534,349	28,083,328
— \$	—	—	—	—	314,998	—	9,544	41,270	—	—	—	400,016	2,799,929
Silver..... oz.t.	1,307,487	—	—	—	4,315,844	8,870,402	767,543	876,450	—	8,391,640	7,014,976 ¹	21,381,977	29,895,465
— \$	1,145,105	—	—	—	4,068,115	8,361,240	723,486	826,142	17	7,909,960	6,612,316 ¹	29,560,661	34,897,604
Tellurium..... lb.	—	—	—	—	63,904	8,050	1,059	4,590	—	—	—	77,609	61,211
— \$	—	—	—	—	309,834	39,043	5,136	22,291	—	—	—	376,404	367,406
Thorium..... lb.	—	—	—	—	—	—	—	—	—	—	—	—	—
Tin..... lb.	—	—	—	—	—	—	—	—	—	1,119,350	—	1,119,350	688,414
— \$	—	—	—	—	—	—	—	—	—	727,578	—	727,578	447,469
Uranium (U ₃ O ₈)..... lb.	—	—	—	—	—	14,970,594	—	4,310,871	—	—	—	19,281,466	16,862,523
— \$	—	—	—	—	—	151,060,610	—	44,631,014	—	—	—	196,666,424	151,425,006

9.—Detailed Mineral Production, by Province, 1961 with Preliminary Totals for 1962—concluded

Mineral	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	CANADA	
												1961	1962p
Non-metallics—conc.													
Sulphur, in ton	—	—	—	—	127,178	823,682	—	—	—	1,757,250	—	277,056	286,566
Smelter gas, ton	—	—	—	—	—	—	—	—	—	—	—	2,708,110	2,777,262
Sulphur, ton	—	—	—	—	—	31,376	—	31,244	6,133,261	1,092,000	—	394,762	668,126
Elemental, ton	—	—	—	—	—	—	—	—	—	—	—	7,287,881	8,903,209
Titanium, ton	—	—	—	—	—	—	—	—	—	—	—	16,723,743	7,779,329
Dioxide, etc. \$	—	—	—	—	16,723,743	—	—	—	—	—	—	—	—
Fuels													
Coal.....ton	—	—	41,716,107	7,086,695	—	9,160,788	10,156,000	125,015,900	437,946,055	20,784,550	861,707	653,327,802	796,851,086
Natural gas.....Mcf.	—	—	4,300,758	887,903	—	—	—	2,208,851	2,027,826	964,663	7,703 ¹	10,357,701	10,257,892
Natural gas.....Mcf.	—	—	41,716,107	7,086,695	—	—	—	3,769,357	10,472,978	64,453,373	114,221 ¹	70,052,633	68,327,159
Natural gas, bbl.	—	—	—	96,318	—	14,544,165	—	37,192,595	500,843,900	103,018,988	41,678 ²	655,737,644	955,526,300
by-products, \$	—	—	—	143,215	—	5,614,018	—	4,050,274	48,882,365	9,714,690	17,325 ³	68,421,918	97,912,950
Petroleum, bbl.	—	—	—	—	—	—	—	1,476,478	23,059,867	2,756,614	—	27,292,959	46,818,065
crude, \$	—	—	—	12,024	—	1,149,087	4,480,348	55,890,104	157,811,712	1,017,826	516,979 ⁴	220,848,080	241,007,849
	—	—	—	16,833	—	3,546,740	10,156,000	115,719,791	355,530,845	1,859,873	730,160 ⁴	487,560,242	583,592,912
Structural													
Materials.....\$	5,277,226	606,644	9,753,455	9,738,355	99,013,894	130,093,420	16,048,660	10,336,272	28,040,070	22,437,767	—	331,345,763	350,266,379
Clay products...\$	75,890	—	1,582,153	744,293	8,195,790	19,036,556	623,966	1,115,474	3,517,473	2,091,353	—	36,982,948	37,738,098
Cement.....ton	86,519	—	—	2,750,652	2,029,159	2,226,923	395,134	201,950	677,914	471,366	—	6,205,948	6,786,220
Lime.....ton	1,789,980	—	—	17,054,052	31,412,617	35,671,569	7,768,334	4,985,021	12,420,025	7,132,046	—	103,923,644	113,864,118
Sand and gravel ton	—	—	—	13,820	407,427	865,130	48,701	—	47,506	32,616	—	1,415,200	1,388,624
Stone.....ton	3,353,724	544,497	5,574,377	308,027	5,086,976	11,548,132	833,238	7,626,197	838,365	602,633	—	19,217,371	17,628,004
by-products, \$	2,777,393	381,644	6,513,612	5,014,234	44,126,199	70,208,199	7,402,885	7,626,197	12,591,944	14,279,191	—	170,790,947	167,728,007
Stone.....ton	322,820	225,000	1,021,880	2,957,886	22,648,010	40,361,843	5,817,415	4,235,777	10,927,753	9,087,792	—	104,631,132	119,238,032
Grand Totals, 1961.....\$	633,963	225,000	1,657,690	3,155,844	32,825,279	23,493,092	1,005,707	—	337,150	3,533,943	—	66,567,668	62,803,131
Grand Totals, 1962p.....\$	91,618,709	606,644	61,693,156	18,804,355	455,522,933	943,669,456	101,489,787	215,977,233	473,480,540	188,542,078	30,895,466	2,582,300,357	...
Grand Totals, 1962p.....\$	95,261,813	796,043	62,859,039	24,904,991	519,145,596	902,133,708	159,038,359	236,577,640	578,821,732	229,427,347	31,017,927	...	2,842,984,195

¹ All produced in Yukon Territory.² Yukon production 880,773 lb. valued at \$257,098; remainder N.W.T.³ Yukon production 66,878 oz.t. valued at \$2,371,494; remainder N.W.T.⁴ All produced in N.W.T.⁵ Yukon production 66,878 oz.t. valued at \$3,583,897; remainder N.W.T.

Subsection 3.—Production of Metallic Minerals

The metallic minerals of greatest dollar value in Canada during 1962 were, in order: nickel, copper, iron ore, gold, uranium, zinc, lead and silver. Except for uranium, which dropped from third place to fifth, this order remained unchanged from 1961. Developments taking place in metal mining during 1962 are described in detail in Section 1, pp. 524-536. The following statistical information gives a comparison of quantity and value figures for each of the principal metals over the ten-year period 1953-62.

Nickel.—The value of nickel output reached an all-time high in 1962, although the quantity produced was slightly less than in the previous year. A steadily upward trend in production experienced after the end of the War was interrupted in 1958 when a rise in world stocks brought about a decrease in nickel prices. However, 1959 output was again close to the level of 1957 and increases were recorded in the next two years. As stated on p. 524, satiation of requirements resulted in a cutback in production in the latter part of 1962 which, with a lower output from the Northwest Territories, counterbalanced a considerable increase in Manitoba's output and a new production from Quebec.

Canada uses only about 5,000 tons of refined nickel (anodes, cathodes and ingots) annually. Exports amounted to 121,712 tons in 1962, mostly to the United States and Britain, and exports of nickel in ores, concentrates and matte, mostly to Britain, amounted to 77,409 tons.

10.—Nickel Production, by Province, and Total Value 1953-62

Year	Que.	Ont.	Man.	B.C.	N.W.T.	Canada	
						Quantity	Value
	tons	tons	tons	tons	tons	tons	\$
53.....	—	143,693	—	—	—	143,693	160,430,098
54.....	—	158,010	3,269	—	—	161,279	180,173,392
55.....	—	161,161	13,767	—	—	174,928	215,866,007
56.....	—	167,576	10,939	—	—	178,515	222,204,860
57.....	—	177,396	10,034	—	528	187,958	258,977,309
58.....	—	127,144	9,778	704	1,933	139,559	194,142,019
59.....	—	173,964	10,139	531	1,921	186,555	257,008,801
60.....	—	201,650	9,059	1,890	1,907	214,506	295,640,279
61.....	—	196,218	32,978	2,090	1,705	232,991	351,261,720
62.....	1,564	165,441	62,099	1,892	1,072	232,068	385,224,707

Copper.—Production of copper in Canada reached its peak in 1962 in both quantity and value. Increases in British Columbia, Quebec and Newfoundland, together with contributions from Nova Scotia and New Brunswick, offset decreased output in the other provinces and the territories.

11.—Copper Production, by Province, and Total Value 1953-62

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 6-17 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
53.....	2,814	788	—	54,920	130,582	9,411
54.....	3,481	991	—	83,930	140,776	12,274
55.....	3,052	1,028	35	101,021	146,407	19,379
56.....	3,108	404	6	122,300	156,271	17,973
57.....	4,536	—	5,738	112,409	171,703	18,551
58.....	14,751	—	328	131,445	142,035	12,601
59.....	14,989	—	—	134,912	188,272	12,945
60.....	13,863	—	—	157,470	206,272	12,793
61.....	15,752	—	—	149,007	211,647	12,454
62.....	18,342	241	6,629	151,390	184,684	10,934

11.—Copper Production, by Province, and Total Value 1953-62—concluded

Year	Saskatchewan	British Columbia	Northwest Territories	Yukon Territory	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1953.....	30,588	24,148	—	—	253,252	150,953,742
1954.....	36,192	25,088	—	—	302,732	175,712,693
1955.....	32,945	22,127	—	—	325,994	239,756,455
1956.....	33,116	21,682	—	—	354,860	292,958,091
1957.....	30,597	15,410	165	—	359,109	206,897,988
1958.....	37,510	6,010	434	—	345,114	174,430,930
1959.....	35,536	8,121	494	—	395,269	233,102,813
1960.....	31,785	16,559	520	—	439,262	264,846,637
1961.....	33,479	15,845	463	440	439,087	255,157,622
1962p.....	32,127	53,709	305	229	458,590	293,133,245

Iron Ore.—Shipments of iron ore from Canadian mines, which have fluctuated considerably over the past ten years, reached a record level in 1962. The quantity shipped by each producing province was higher than in 1961, but the major increase was contributed by Quebec which accounted for 42 p.c. of the country's output.

Production of pig iron and of steel ingots and castings was also at its highest level in 1962. Exports of iron ore—direct shipping grade, concentrated, agglomerated and other forms—amounted to 24,243,249 tons valued at \$220,522,000, a considerable increase over the 1961 totals. Of the 1962 tonnage exported, 78 p.c. went to the United States and most of the remainder to Europe, mainly to Britain. Japan received 1,729,866 tons.

12.—Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1953-62

Year	Iron Ore Shipments						Production of Pig Iron	Production of Steel Ingots and Castings
	Nfld.	Que.	Ont.	B.C.	Canada			
					Quantity	Value		
1953.....	2,686,481	—	2,832,090	991,247	6,509,818	44,102,944	3,012,268	4,116,060
1954.....	3,758,526	650,415	2,416,911	535,746	7,361,598	49,666,507	2,211,029	3,195,039
1955.....	7,206,883	4,103,173	4,362,191	610,930	16,283,177	110,435,850	3,215,367	4,534,677
1956.....	8,463,572	7,956,549	5,558,203	369,954	22,318,278	160,362,118	3,568,203	5,301,202
1957.....	8,174,779	8,872,948	4,867,105	357,312	22,272,174	167,221,425	3,718,350	5,068,140
1958.....	5,390,775	6,060,325	3,644,952	630,271	15,726,323	126,131,181	3,059,579	4,359,460
1959.....	6,105,819	11,515,169	6,018,089	849,248	24,488,325	192,666,101	4,182,775	5,901,488
1960.....	7,611,365	7,457,971	5,325,197	1,154,297	21,550,830	175,082,523	4,278,425	5,789,577
1961.....	7,611,340	5,639,931	5,772,664	1,335,068	20,359,003	187,950,047	4,925,395	6,466,326
1962p.....	7,744,524	11,584,497	6,652,331	1,917,351	27,898,713	264,608,450	5,289,933	7,173,477

Gold.—Over the ten-year period 1953-62, Canada's annual gold production fluctuated narrowly between 4,000,000 oz.t. and 4,600,000 oz.t. and its value between \$140,000,000 and \$159,000,000; the high point was reached in 1961. Output in 1962 was down to 3,184,899 oz.t. compared with 1961 and, despite the establishment of a higher price per oz. (see p. 529), the value was \$3,191,000 lower. All provinces except Newfoundland, Manitoba and British Columbia, as well as the Yukon and Northwest Territories, reported decrease in output in 1962, the major producers—Ontario and Quebec—declining by 9.2 p.c. and 5.3 p.c., respectively. Ontario produced 57.6 p.c. of Canada's gold output in 1961, Quebec 24.0 p.c., the Northwest Territories 9.5 p.c. and British Columbia 4.1 p.c.

13.—Quantity and Value of Gold Produced, by Province, 1953-62

NOTE.—Values are calculated at world prices in Canadian funds. Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland		Nova Scotia		Quebec		Ontario	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz.t.	\$	oz.t.	\$	oz.t.	\$	oz.t.	\$
953.....	7,651	263,451	3,248	111,796	1,021,698	35,166,845	2,182,437	75,119,481
954.....	6,528	222,409	3,754	127,899	1,098,570	37,428,280	2,361,385	80,452,387
955.....	6,337	218,753	3,880	133,938	1,154,522	39,854,099	2,523,040	87,095,340
956.....	8,213	282,938	1,279	44,061	1,036,059	35,692,233	2,513,912	86,604,268
957.....	9,755	327,280	45	1,510	1,006,895	33,781,327	2,578,206	86,498,811
958.....	13,381	454,686	131	4,451	1,041,846	35,503,867	2,716,514	92,307,146
959.....	13,411	450,207	—	—	999,388	33,549,455	2,683,449	90,083,383
960.....	13,515	458,834	3	102	1,035,914	35,169,280	2,732,673	92,774,248
961.....	14,429	511,652	—	—	1,054,029	37,375,868	2,637,720	93,533,551
962 ^a	16,375	612,589	—	—	998,502	37,353,960	2,393,817	89,552,694
Year	Manitoba		Saskatchewan		Alberta		British Columbia	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz.t.	\$	oz.t.	\$	oz.t.	\$	oz.t.	\$
153.....	131,309	4,519,656	88,327	3,040,215	65	2,237	264,976	9,120,474
154.....	134,944	4,597,542	101,785	3,467,815	195	6,644	268,508	9,148,068
155.....	123,888	4,270,614	83,580	2,885,182	214	7,387	252,979	8,732,835
156.....	120,232	4,141,992	82,687	2,848,567	119	4,100	196,692	6,776,040
157.....	120,008	4,026,268	75,236	2,524,168	416	13,957	229,113	7,686,741
158.....	87,356	2,968,357	86,590	2,942,328	282	9,582	210,612	7,156,596
159.....	51,186	1,718,314	78,588	2,638,199	200	6,714	184,312	6,187,354
160.....	52,762	1,791,270	84,775	2,878,111	191	6,484	212,859	7,226,563
161.....	57,747	2,047,709	70,784	2,510,000	171	6,064	164,467	5,832,000
162 ^a	61,124	2,286,649	67,783	2,535,762	108	4,040	169,683	6,347,841
Year	Northwest Territories		Yukon Territory		Canada			
	Quantity	Value	Quantity	Value	Quantity	Value		
	oz.t.	\$	oz.t.	\$	oz.t.	\$		
163.....	289,929	9,979,356	66,080	2,274,474	4,055,723	139,597,985		
164.....	308,563	10,512,741	82,208	2,800,826	4,366,440	148,764,611		
165.....	321,321	11,092,001	72,201	2,492,379	4,541,982	156,788,528		
166.....	352,669	12,149,447	72,001	2,480,434	4,383,863	151,024,080		
167.....	340,018	11,407,604	73,962	2,481,425	4,433,894 ¹	148,757,143 ¹		
168.....	343,838	11,683,615	67,745	2,301,975	4,571,347 ²	155,334,370 ²		
169.....	405,922	13,626,802	66,960	2,247,847	4,483,416	150,508,275		
170.....	418,104	14,194,631	78,115	2,652,004	4,628,911	157,151,527		
171.....	407,474	14,449,028	66,878	2,371,494	4,473,699	158,637,366		
172 ^a	393,433	14,718,329	54,086	2,023,357	4,155,210 ³	155,446,407 ³		

¹ Includes 240 oz.t. valued at \$8,052 produced in New Brunswick.

² Includes 52 oz.t. valued at \$1,767 produced in New Brunswick.

³ Includes 299 oz.t. valued at \$11,186 produced in New Brunswick.

Uranium.—Uranium mineralization has been found in Canada at intervals along western and southern edges of the Canadian Shield but production has been concentrated in four areas within this belt—Great Bear Lake in the Northwest Territories, Verlore in northern Saskatchewan, and Elliot Lake and Bancroft in Ontario. Although put of uranium first began in the Northwest Territories in 1942, figures were not available until 1954 because of government restrictions. However, it was after that time that the large mines and mills of Saskatchewan and Ontario came into production. Peak output amounting to 31,800,000 lb. was reached in 1959 from 23 mines, but by the end of

1962, for economic reasons (see p. 531), eight mines (seven companies) remained in operation and production dropped to about 17,000,000 lb. for the year. Of the 1962 quantity, 76.1 p.c. was produced in Ontario and the remainder in Saskatchewan.

14.—Production and Value of Uranium (U_3O_8), by Province, 1954-62

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity ¹	Value	Quantity ¹	Value	Quantity ¹	Value	Quantity ¹	Value
	lb.	\$	lb.	\$	lb.	\$	lb.	\$
1954.....	—	—	..	10,981,417	..	15,488,157	..	26,467,571
1955.....	..	487,054	..	12,312,471	..	13,232,079	..	26,031,604
1956.....	908,614	9,361,867	2,780,534	27,194,202	873,912	9,176,076	4,561,060	45,732,142
1957.....	7,970,598	82,940,763	4,462,552	44,561,832	838,264	8,801,769	13,271,414	136,301,364
1958.....	19,970,136	210,149,700	5,924,253	59,815,924	910,843	9,572,847	26,805,232	279,538,471
1959.....	25,492,171	268,529,993	5,372,685	51,157,321	919,333	8,155,729	31,784,189	331,143,041
1960.....	19,793,727	211,983,533	4,621,431	48,722,961	1,077,211	9,231,698	25,495,369	269,938,191
1961.....	14,970,594	151,060,610	4,310,871	44,631,014	—	—	19,281,465	195,691,621
1962 ²	12,842,339	115,288,585	4,020,484	36,136,421	—	—	16,862,823	151,425,001

¹ Figures for 1956 include radium salts, silver, cobalt and uranium oxides; figures for 1957-62 are for uranium oxide (U_3O_8).

Zinc.—The estimated production of zinc (including refined zinc, zinc ores and concentrates) showed considerable improvement in 1962 over 1961. British Columbia accounted for 43.8 p.c. of the quantity produced, Quebec for 15.1 p.c., Ontario 13.6 p.c. and Manitoba 11.2 p.c., followed in order by Newfoundland, Saskatchewan, Yukon Territory, New Brunswick and Nova Scotia. Large increases were reported by Manitoba, Quebec and Ontario, new production was shown by New Brunswick and Nova Scotia. Newfoundland's output remained approximately the same as in 1961 and slight increases were reported by the other producers.

15.—Quantity and Value of Zinc Produced, 1953-62

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Quantity ¹	Value	Average Price per lb.	Year	Quantity ¹	Value	Average Price per lb.
	tons	\$	cts.		tons	\$	cts.
1953.....	401,762	96,101,386	11.96	1958.....	425,099	92,501,496	10.88
1954.....	376,491	90,207,285	11.98	1959.....	388,008	96,942,663	12.24
1955.....	433,357	118,306,466	13.65	1960.....	406,873	109,635,003	13.35
1956.....	422,642	125,437,344	14.84	1961.....	416,004	104,749,879	12.59
1957.....	413,740	100,042,533	12.09	1962 ²	457,144	110,628,845	12.10

¹ Estimated foreign smelter recoveries and refined zinc produced in Canada.

Lead.—Lead production in 1962 in the form of refined pig and recoverable lead ore and concentrates was somewhat lower than the record output of 1961. As stated on p. 532, most of the decrease resulted from lower production at Canada's only lead refinery, located at Trail, B.C. British Columbia produced about 76 p.c. of the total 1962 output. Lead occurs in the complex ores at Buchans in Newfoundland and in the silver-lead ore mined in the Mayo district of Yukon Territory, and smaller amounts are produced in Quebec, Manitoba and Ontario. In 1962, Nova Scotia recorded its first output from a new mine and New Brunswick renewed production in the Bathurst area.

16.—Quantity and Value of Lead Produced from Canadian Ores, 1953-62

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1953.....	193,706	50,076,822	1958.....	186,680	42,413,805
1954.....	218,495	58,250,831	1959.....	186,696	39,616,835
1955.....	202,762	58,314,500	1960.....	205,650	43,926,888
1956.....	188,854	58,582,651	1961.....	230,435	47,054,765
1957.....	181,484	50,670,407	1962 ^p	190,609	37,816,785

Silver.—Production of silver is fairly widespread across Canada, being recovered mainly as a by-product in the treatment of gold ores and ores of copper, lead, zinc, cobalt and nickel. Output is therefore often affected by changes in the production of these metals. Thus, the drop in the amount of lead produced at the Trail refinery in 1962 caused a reduction in the output of silver in British Columbia. This reduction, together with decreases recorded by Ontario, Saskatchewan and the Territories, was only partially offset by increases in the other producing provinces. However, an increase in the price of silver (see p. 533) brought the value of the 1962 production to an all-time high.

17.—Quantity of Silver Produced, by Province, and Total Value, 1953-62

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Average Price per oz.t. (Canadian funds)	Newfoundland	Nova Scotia	Quebec	Ontario	Manitoba
	cts.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
1953.....	84.01	648,389	226,225	4,571,373	5,154,619	429,508
1954.....	83.26	742,120	262,361	4,907,304	5,443,721	411,125
1955.....	83.18	701,792	262,087	4,735,695	6,051,017	454,528
1956.....	89.67	957,125	92,859	4,063,966	6,626,447	430,124
1957.....	87.37	1,196,414	1	3,645,856	6,910,130	407,834
1958.....	86.81	1,267,078	4	3,908,361	9,815,257	320,759
1959.....	87.78	1,125,110	—	4,108,241	10,540,856	373,827
1960.....	88.91	1,271,126	—	4,115,105	11,220,823	501,637
1961.....	94.26	1,145,105	—	4,315,844	8,870,402	767,543
1962 ^p	116.50	1,430,510	741,918	5,234,948	8,157,945	854,610

	Saskatchewan	British Columbia	Northwest Territories	Yukon Territory	Canada ¹	
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	\$
1953.....	1,257,622	9,308,874	63,592	6,639,127	28,299,335	23,774,271
1954.....	1,474,370	10,825,614	59,037	6,992,279	31,117,949	25,907,870
1955.....	1,230,179	8,702,122	58,477	5,712,219	27,984,204	24,676,472
1956.....	1,179,110	8,801,398	69,916	6,192,706	28,431,847	25,497,681
1957.....	1,145,571	8,584,991	69,104	6,484,185	28,823,298	25,182,915
1958.....	1,299,077	8,013,428	72,779	6,415,560	31,163,470	27,053,007
1959.....	1,187,439	7,463,285	70,560	7,054,632	31,923,969	28,022,860
1960.....	1,163,845	8,447,440	79,473	7,217,361	34,016,829	30,244,363
1961.....	876,450	8,391,640	77,890	6,937,086	31,321,977	29,580,651
1962 ^p	773,611	5,995,195	72,610	6,581,615	29,955,465	34,897,604

¹ Includes relatively small quantities produced in New Brunswick and Alberta. There was no silver produced in New Brunswick from 1958 to 1961; output in 1962 was 112,493 oz.t.

Subsection 4.—Production of Non-metallic Minerals (excluding Fuels)

Asbestos is by far the most important item in this group in point of value, followed by salt, sulphur and gypsum. These four items are discussed separately below. Next in importance is peat moss which, although included as a non-metallic mineral, consists of the dead fibrous moss produced from peat bogs; its growing use as a soil conditioner as poultry and stable litter and as packaging material resulted in shipments valued at nearly \$7,700,000 in 1962, double the shipments of 1956. Quantities and values of other non-metallic minerals produced are shown in Table 5, p. 559, and a review of recent developments in the industrial mineral field is given at pp. 536-538.

Asbestos.—In 1962, Canadian asbestos mines shipped a record 1,223,509 tons valued at \$132,060,710, representing an increase of 4.2 p.c. in quantity and 2.4 p.c. in value over 1961. Quebec, with 12 producing mines, accounted for over 92 p.c. of the total tonnage; Ontario's one mine produced 35,000 tons and British Columbia's one mine produced 55,700 tons.

18.—Quantity and Value of Asbestos Produced, 1953-62

NOTE.—Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1953.....	911,226	86,052,895	1958.....	925,331	92,276,748
1954.....	924,116	86,409,212	1959.....	1,050,429	107,433,344
1955.....	1,063,802	96,191,317	1960.....	1,118,456	121,400,015
1956.....	1,014,249	99,859,969	1961.....	1,173,695	128,955,900
1957.....	1,046,086	104,489,431	1962 ^a	1,223,509	132,060,710

Salt.—The output of salt reached a high point in both quantity and value in 1962, with all producing provinces contributing to the increase over 1961. Ontario produced almost 87 p.c. of the total tonnage. Rock salt is mined in Nova Scotia and Ontario only; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

19.—Quantity of Salt Produced, by Province, and Total Value, 1953-62

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	Canada	
	tons	tons	tons	tons	tons	tons	\$
1952.....	127,819	749,046	18,078	35,100	24,885	954,928	6,974,501
1954.....	150,580	733,066	17,809	37,227	31,196	969,887	8,340,163
1955.....	144,862	998,780	18,954	40,748	41,408	1,244,761	10,122,299
1956.....	132,539	1,347,729	21,068	42,814	46,654	1,590,804	12,144,476
1957.....	122,763	1,538,805	19,372	43,684	46,935	1,771,559	13,989,703
1958.....	125,872	2,128,483	20,560	46,511	55,766	2,375,192	14,989,542
1959.....	120,225	3,036,230	23,547	48,776	61,198	3,289,976	18,034,522
1960.....	163,901	3,007,599	21,925	49,034	72,431	3,314,920	19,355,658
1961.....	225,875	2,861,705	23,103	51,964	83,880	3,246,527	19,582,006
1962 ^a	309,688	3,127,043	24,100	54,180	91,800	3,603,811	23,185,423

Sulphur.—The figures in Table 20 represent the quantity and value of sulphur contained in derivatives from smelter gases such as sulphur dioxide, sulphuric acid, etc., and in pyrite and pyrrhotite shipments, as well as the quantity and value of sulphur

refined from natural gas production. The increase in the latter over the past five years has been quite remarkable. In Canada, sulphur is used in the treatment of sulphite pulps and in the manufacture of rayon, explosives, rubber goods, petroleum refining, matches and insecticides.

20.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, and Quantity of Elemental Sulphur Sales, 1953-62

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite			Sales of Elemental Sulphur ¹	
	Quantity	Value	Gross Weight	Sulphur Content	Value	Quantity	Value
	tons	\$	tons	tons	\$	tons	\$
1953.....	172,200 ²	1,722,000	408,257	186,650 ³	1,450,698	16,072	..
1954.....	221,247 ²	2,212,470	687,928	311,159 ³	2,663,499	18,665	..
1955.....	224,457 ²	2,244,570	878,452	403,986 ³	3,740,383	25,976	..
1956.....	236,088 ²	2,323,590	1,046,740	473,605	4,538,785	34,784	..
1957.....	235,123 ²	2,322,067	1,166,416	515,096	4,808,228	93,338	..
1958.....	241,055 ²	2,361,252	1,191,731	512,427	4,248,668	94,377	1,872,832
1959.....	277,030 ²	2,716,416	1,099,564	..	3,433,095	145,656	2,620,787
1960.....	289,620 ²	2,854,623	1,032,288	..	3,316,378	274,359	4,298,906
1961.....	277,056 ²	2,708,110	517,258 ⁴	..	1,830,566	394,762	7,287,881
1962 ²	286,566 ²	2,777,262	532,082 ⁴	..	1,703,225	668,126	8,903,209

¹ Recovered from sour natural gas and nickel sulphide ores.
 from roasting zinc sulphide concentrates at Arvida.
 sulphide concentrates at Arvida and Port Maitland.
 residue or sinter.

² Does not include sulphur in acid made

³ Includes sulphur in acid made from roasting zinc

⁴ Excludes pyrite and pyrrhotite used to produce iron

Gypsum.—Nova Scotia deposits provided 83 p.c. of the total output of gypsum in 1962. Only British Columbia among the producing provinces failed to show an increase in output in 1962 over 1961. The over-all increase in quantity was about 5 p.c. and in value about 17 p.c. Both quantity and value were only slightly below their peak production in 1960. In Canada, gypsum is used in the manufacture of plaster and wallboard and is added to Portland cement to control setting, but the greater part of the output is exported in crude form to United States plants for processing.

21.—Quantity of Gypsum Produced, by Province, and Total Value, 1953-62

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Ontario	Manitoba	British Columbia	Canada	
	tons	tons	tons	tons	tons	tons	tons	\$
1953.....	26,531	3,050,832	120,816	334,495	163,313	145,470	3,841,457	7,399,884
1954.....	26,653	3,168,134	88,856	357,432	162,037	147,310	3,950,422	7,094,071
1955.....	46,459	3,838,847	90,096	366,416	176,005	150,078	4,667,901	8,037,153
1956.....	37,000	4,144,147	86,104	366,956	185,988	75,618	4,895,811	7,260,236
1957.....	29,465	3,842,027	93,249	379,621	183,708	49,422	4,577,492	7,745,105
1958.....	36,307	3,149,719	105,749	425,733	176,123	70,498	3,964,129	5,189,159
1959.....	37,720	5,036,411	98,250	412,100	200,139	94,010	5,878,650	8,393,703
1960.....	34,246	4,490,427	90,892	355,603	122,063	112,400	5,205,731	9,498,711
1961.....	40,699	4,113,188	85,330	425,287	122,233	153,300	4,940,037	7,750,748
1962 ²	51,200	4,302,568	89,100	450,000	139,355	151,688	5,183,911	9,033,148

Subsection 5.—Production of Fuels

Coal.—The downward trend in the production of coal, in evidence for some time was interrupted in 1960 but resumed again in 1961. In 1962, all producing provinces with the exception of Saskatchewan and Alberta showed some decrease in output compared with the previous year. Imports also declined and the quantity of exports was down slightly although their value remained about the same.

22.—Coal Production, by Province, 1953-62

NOTE.—Figures from 1874 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada	
	tons	tons	tons	tons	tons	tons	tons	\$
1953.....	5,787,026	721,252	2,021,304	5,917,474	1,443,006	10,611	15,900,673	102,721,871
1954.....	5,842,896	781,271	2,116,740	4,859,049	1,299,510	14,113	14,913,579	96,600,261
1955.....	5,731,026	877,838	2,293,816	4,455,279	1,453,881	7,040	14,818,880	93,579,471
1956.....	5,775,025	988,266	2,341,641	4,328,787	1,472,519	9,372	14,915,610	95,349,761
1957.....	5,685,770	976,597	2,248,812	3,156,546	1,113,699	7,731	13,189,155	90,220,671
1958.....	5,269,879	790,719	2,253,176	2,519,901	849,091	4,344	11,687,110	79,963,321
1959.....	4,391,829	1,003,387	1,947,380	2,528,755	751,192	3,879	10,626,722	73,875,891
1960.....	4,570,240	1,028,684	2,170,797	2,391,699	843,868	6,470	11,011,138	74,676,241
1961.....	4,300,758	887,903	2,208,851	2,027,826	964,663	7,703	10,397,704	70,052,681
1962.....	4,204,779	815,529	2,256,306	2,087,310	913,196	7,649	10,284,769	68,419,441

23.—Imports of Anthracite, Bituminous and Lignite Coal and Briquettes, 1953-62

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Anthracite ¹	Bituminous ²	Lignite	Briquettes ³	Totals	
	tons	tons	tons	tons	tons	\$
1953.....	2,989,054	20,273,425	3,062	128,673	23,394,214	138,168,821
1954.....	2,754,882	15,822,283	2,824	128,163	18,708,152	106,378,801
1955.....	2,646,503	17,094,480	1,548	124,216	19,866,747	108,087,261
1956.....	2,545,627	20,065,807	1,940	126,724	22,740,098	130,318,361
1957.....	1,925,498	17,548,585	2,166	73,306	19,549,555	118,581,701
1958.....	1,556,018	12,934,262	1,035	41,820	14,533,135	88,552,321
1959.....	1,603,909	12,621,429	10,780 ⁴	24,521	14,260,639	81,808,831
1960.....	1,297,467	12,250,832	16,537 ⁴	15,528	13,580,364	77,174,111
1961.....	1,058,157	11,237,629	10,712 ⁴	9,664	12,316,162	71,717,031
1962.....	914,336	11,687,898	11,955 ⁴	7,608	12,621,797	74,307,251

¹ Includes anthracite dust 1953-58.

² Includes coal ex-warehoused for ships' stores.

³ Coal or coke.

⁴ Beginning 1959 includes coal dust, ground coal and coal n.o.p.

24.—Exports of Domestic Coal, 1953-62

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1953.....	255,274	1,999,908	1958.....	338,544	2,907,513
1954.....	219,346	1,716,435	1959.....	473,768	3,582,313
1955.....	592,782	4,870,598	1960.....	852,921	6,789,163
1956.....	594,166	4,710,030	1961.....	939,360	8,541,679
1957.....	396,311	3,357,959	1962.....	901,560	8,590,693

The amounts and percentages of domestic and imported coal apparently consumed in Canada in the years 1953-62 are shown in Table 25. The imports represent amounts taken out of bond for consumption during the respective years, regardless of when received. Thus the totals are exclusive of coal landed at Canadian ports and re-exported or ex-warehoused for ships' stores without being taken out of bond. However, since such coal while remaining in bond at the port is available for Canadian consumption if required, the total amount of coal made available for consumption in Canada in 1962 amounted to 21,824,538 tons, including 851,668 tons of anthracite, 17,220,149 tons of bituminous, 1,496,661 tons of subbituminous, and 2,256,060 tons of lignite.

25.—Consumption of Canadian and Imported Coal in Canada, 1953-62

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 92d edition.

Year	Canadian Coal ¹		Imported Coal 'Entered for Consumption' ²				Grand Total	Consumption per Capita
			From United States	From Britain	Total ³			
			tons	p.c.	tons	tons		
1953.....	15,240,105	40.0	22,548,793	352,383	22,900,392	60.0	38,140,497	2.58
1954.....	14,466,212	44.0	18,054,962	266,304	18,322,056	56.0	32,788,268	2.16
1955.....	14,060,039	42.1	19,053,434	269,898	19,322,134	57.9	33,382,173	2.14
1956.....	14,115,095	38.9	22,045,185	153,404	22,198,049	61.1	36,313,144	2.26
1957.....	12,478,626	39.6	18,910,544	134,671	19,041,030	60.4	31,519,656	1.90
1958.....	11,054,757	43.9	14,089,557	65,275	14,154,121	56.1	25,208,878	1.48
1959.....	10,589,263	43.1	13,861,676	96,814	13,958,996	56.9	24,548,259	1.41
1960.....	9,973,308	42.9	13,211,493	65,375	13,276,599	57.1	23,249,907	1.31
1961.....	9,572,805	44.3	12,253,272	53,226	12,057,086	55.7	21,629,891	1.19
1962.....	9,510,293	43.4	12,583,618	30,571	12,377,965	56.6	21,888,258	1.18

¹ The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in making coke, etc., less the tonnage of coal exported.
² Imports of briquettes are not included in this table.
³ Includes small tonnages from countries other than Britain and the United States. Deductions have been made from this column to take account of foreign coal re-exported from Canada and bituminous coal ex-warehoused for ships' stores.

Petroleum.—The upward climb of crude petroleum production which started with the discovery of the Leduc field in Alberta in 1947 halted temporarily in 1958 but resumed in 1959 and continued in subsequent years. Quantity production in 1962 reached a record level, about 23,000,000 bbl. higher than in 1961. This increase was contributed almost equally by Alberta, Saskatchewan and British Columbia.

26.—Quantity and Value of Crude Petroleum Produced, by Province, 1953-62

NOTE.—Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 8-49 edition.

Year	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	\$	bbl.	\$	bbl.	\$	bbl.	\$
1953.....	14,738	20,633	299,685	994,835	653,514	1,714,806	2,797,888	3,833,107
1954.....	13,046	18,265	412,474	1,391,687	2,148,184	5,619,649	5,422,899	8,183,304
1955.....	12,548	17,567	525,510	1,599,335	4,145,756	9,618,151	11,317,168	18,317,968
1956.....	16,628	23,279	593,370	1,958,121	5,786,540	13,633,088	21,077,371	36,253,078
1957.....	19,401	27,161	623,666	2,160,000	6,089,743	15,467,947	36,861,089	79,325,064
1958.....	15,189	21,265	778,341	2,623,000	5,829,226	14,415,676	44,626,148	96,704,863
1959.....	14,479	20,271	1,001,580	3,194,000	5,056,075	11,619,872	47,442,498	97,731,546
1960.....	14,148	19,807	1,005,030	3,150,065	4,764,045	10,690,384	51,908,428	103,957,009
1961.....	12,024	16,833	1,149,087	3,546,740	4,480,348	10,156,000	55,860,104	115,719,791
1962.....	10,000	14,000	1,143,500	3,682,070	3,971,144	9,590,325	64,000,000	141,000,000

26.—Quantity and Value of Crude Petroleum Produced, by Province, 1953-62—concluded

Year	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	\$	bbl.	\$	bbl.	\$	bbl.	\$
1953.....	76,816,383	193,761,644	—	—	316,689	257,251	80,898,897	200,582,27
1954.....	87,713,855	228,319,165	—	—	369,887	344,960	96,080,345	243,877,03
1955.....	113,035,046	274,901,232	—	—	404,219	1,185,780	129,440,247	305,640,03
1956.....	143,909,641	353,629,158	148,454	302,375	449,409	762,773	171,981,413	406,561,87
1957.....	137,492,316	355,555,140	340,945	763,717	420,844	294,591	181,848,004	453,593,62
1958.....	113,277,817	283,262,592	512,359	1,022,156	457,086	698,266	165,496,196	398,747,81
1959.....	129,967,312	305,917,803	866,234	1,583,129	430,319	1,025,914	184,778,497	422,092,53
1960.....	130,506,968	302,841,423	887,057	1,626,590	468,545	641,219	189,534,221	422,926,49
1961.....	157,811,712	355,530,845	1,017,826	1,859,873	516,979	730,160	220,848,080	487,560,24
1962p.....	165,046,000	410,964,540	9,242,205	17,449,477	595,000	892,500	244,007,849	583,592,91

Natural Gas.—The output of natural gas continued to increase at a rapid rate in Alberta and British Columbia. Total Canadian shipments, which amounted to 150,772,000 Mcf. in 1955 reached a high of 955,526,000 Mcf. in 1962, 781,000,000 Mcf. of which came from Alberta. A review of developments in the natural gas industry is given at pp. 538-542

27.—Quantities of Natural Gas Produced, by Province, and Total Value, 1953-62

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	New Brunswick	Ontario	Saskatchewan	Alberta	British Columbia	Northwest Territories	Canada	
	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	\$
1953.....	177,112	9,708,969	1,422,128	89,651,605	—	26,109	100,985,923	10,877,01
1954.....	183,457	10,015,818	3,333,077	107,173,777	—	29,085	120,735,214	12,482,10
1955.....	186,549	10,852,857	6,706,743	133,007,493	—	18,670	150,772,312	15,098,60
1956.....	190,322	12,811,618	9,807,697	146,133,893	187,846	21,210	169,152,536	16,849,55
1957.....	176,417	14,400,913	12,994,347	183,140,820	8,274,942	19,243	220,006,682	20,962,60
1958.....	123,957	16,147,986	18,819,795	239,049,591	63,638,297	24,100	337,803,726	32,057,53
1959.....	117,502	16,839,236	33,612,966	297,568,926	69,128,708	67,189	417,334,527	39,609,30
1960.....	98,701	16,987,056	36,571,633	383,682,986	85,592,166	39,785	522,972,327	52,196,88
1961.....	96,318	14,544,165	37,192,595	500,843,900	103,018,988	41,678	655,737,644	68,421,91
1962p.....	87,300	15,875,000	39,000,000	781,000,000	119,500,000	64,000	955,526,300	97,912,95

Subsection 6.—Production of Structural Materials

Active construction throughout Canada has kept production of structural material at a high level in recent years. The value of such materials produced reached the record total of \$350,266,000 in 1962. In point of value, sand and gravel is the most important of the structural materials, followed by cement, stone, clay products and lime. Developments in the cement and silica industries during 1962 are covered in the review at pp. 536-538.

Sand and Gravel.—Deposits of sand and gravel are numerous throughout Eastern Canada, with the exception of Prince Edward Island where gravels are scarce. The local needs for these materials are usually supplied from the nearest deposits as the cost to the consumer is governed largely by the length of haul. This accounts for the large number of small pits and the small number of large plants in operation. Every province except New Brunswick and Prince Edward Island produces natural bonded sand but some grades particularly suitable for certain industries command much higher prices than ordinary sand. The greater part of the sand and gravel output is used in road improvement, concrete works, or as railway ballast and most of the commercial plants are equipped for producing crushed gravel, a product that can compete with crushed stone.

In 1962 an estimated 167,328,000 tons of sand and gravel were produced, valued at \$118,228,000. This represented a decrease of 2 p.c. in quantity and an increase of 13 p.c. in value compared with 1961. Quebec and Ontario together contributed 66 p.c. of the quantity.

28.—Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1953-62

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons	tons
1953.....	1,908,187	..	1,523,083	2,648,235	26,694,125	43,658,099
1954.....	2,105,522	..	1,330,979	3,528,318	30,052,887	46,453,191
1955.....	3,142,226	..	1,156,710	5,731,835	36,722,008	51,488,067
1956.....	2,490,580	..	1,675,458	6,140,029	37,175,708	61,436,363
1957.....	2,796,273	..	1,933,070	7,342,928	40,913,961	66,129,158
1958.....	4,062,985	..	2,333,792	4,015,976	40,507,787	67,469,064
1959.....	4,825,724	5,244,968	8,032,122	5,093,496	42,449,734	73,981,703
1960.....	3,912,533	474,181	8,717,693	6,184,921	46,255,963	77,660,833
1961.....	3,383,724	544,197	5,574,377	5,014,234	44,126,199	70,208,199
1962p.....	3,038,458	697,070	3,291,741	5,909,835	44,060,533	66,319,707
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
	tons	tons	tons	tons	Quantity	Value
	tons	tons	tons	tons	tons	\$
1953.....	4,683,323	4,770,368	7,651,261	7,494,268	101,033,949	53,485,401
1954.....	4,831,716	5,211,429	7,313,380	10,153,612	110,961,034	58,987,671
1955.....	5,272,676	5,039,682	7,819,933	11,151,337	127,524,474	67,775,053
1956.....	6,883,026	6,466,810	10,522,441	16,010,853	148,801,268	81,957,352
1957.....	6,647,280	6,565,563	11,801,422	15,699,857	159,829,512	91,939,354
1958.....	9,997,546	5,380,151	13,226,668	13,216,976	160,210,945	96,282,362
1959.....	9,261,553	5,898,136	13,271,695	17,064,015	185,123,746	104,651,461
1960.....	10,860,566	8,952,539	13,385,970	15,669,293	192,074,498	111,163,886
1961.....	7,402,385	7,626,197	12,591,944	14,279,191	170,750,947	104,654,132
1962p.....	9,801,943	6,518,262	12,076,815	15,613,703	167,328,097	118,228,032

Cement.—The production of cement in Canada reached an all-time high in 1962, but in that year being 8 p.c. above the previous peak reached in 1959. Consumption, continuing the almost steadily upward trend in evidence throughout the postwar period, so attained a record in 1962. Of the Canadian total of 6,786,000 tons produced in that year, Ontario contributed 36 p.c. and Quebec 33 p.c.; all other provinces except Prince Edward Island and Nova Scotia contributed to the remainder, and all producing provinces except British Columbia showed increased production.

29.—Quantity and Value of Production, Imports, Exports and Apparent Consumption of Cement, 1953-62

NOTE.—Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1910 edition.

Year	Shipments (sold or used)		Imports	Exports	Apparent Consumption ¹
	tons	\$	tons	tons	tons
1953.....	3,991,708	58,842,022	434,487	2,577	4,323,618
1954.....	3,926,553	59,035,644	401,135	21,638	4,306,050
1955.....	4,404,480	65,650,025	517,890	168,907	4,753,463
1956.....	5,021,683	75,233,321	677,616 ²	124,581	5,674,738
1957.....	6,049,098	93,167,477	92,380	338,316	5,803,162
1958.....	6,153,421	96,414,142	41,550	141,250	6,053,721
1959.....	6,284,486	95,147,798	29,256	303,126	6,010,616
1960.....	5,787,225	93,261,473	22,478	181,117	5,628,586
1961.....	6,205,948	103,923,644	29,217	249,377	5,985,788
1962p.....	6,786,229	113,864,118	26,525	219,164	6,593,590

¹ Shipments plus imports less exports.

² Includes imported clinker, other than white.

Stone.—The stone industry in Canada has two main divisions—stone quarrying and the stone products industry. The granite, limestone, marble, sandstone and slate quarries yield high-grade structural and decorative materials and also supply requirements for chemical and other allied industries but the major part of the tonnage produced is crushed stone.

30.—Producers' Shipments of Stone,¹ by Province, and Total Value, 1953-62

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec
	tons	tons	tons	tons	tons
1953.....	391,633	..	193,101	987,977	7,754,248
1954.....	359,350	..	9,757,607	720,792	10,111,361
1955.....	333,982	..	367,320	1,075,230	12,633,335
1956.....	227,943	..	408,952	2,129,109	11,153,206
1957.....	348,373	..	434,726	1,285,811	16,053,685
1958.....	282,439	..	435,047	2,100,687	16,963,511
1959.....	352,231	1,700,000	1,393,668	2,119,136	20,437,243
1960.....	380,843	750,000	914,937	1,883,867	20,394,509
1961.....	322,820	225,000	1,021,880	2,957,886	22,648,010
1962 ^a	229,792	225,000	683,054	2,497,756	21,627,582

	Ontario	Manitoba	Alberta	British Columbia	Canada	
	tons	tons	tons	tons	Quantity	Value
	tons	tons	tons	tons	tons	\$
1953.....	8,818,886	377,819	18,833	1,306,520	19,849,017	30,613,051
1954.....	10,141,156	207,556	27,017	1,443,085	32,767,925	39,857,134
1955.....	12,739,139	228,157	45,659	3,090,098	30,512,920	43,739,687
1956.....	15,734,664	262,557	66,820	3,174,067	33,257,318	48,809,189
1957.....	17,390,438	454,972	80,565	4,233,531	40,282,081	59,197,662
1958.....	15,756,560	540,703	91,882	1,985,818	38,156,647	55,582,929
1959.....	17,288,796	526,696	528,961	2,092,304	46,439,525	60,958,784
1960.....	17,938,583	673,598	167,201	2,255,911	45,359,449	60,640,621
1961.....	18,361,843	594,921	96,753	2,709,691	48,938,804	66,567,668
1962 ^a	17,502,951	661,723	87,301	1,755,317	45,270,476	62,808,131

¹ Excludes limestone used to make lime or cement.

Clay Products.—The sales value of clay products produced in 1962 was slightly higher than in 1961. Common clays suitable for the production of building bricks and tile are found in all the provinces; production is greatest in Ontario and Quebec. Stone ware clays are produced largely from the Eastend and Willows areas in Saskatchewan and shipped to Medicine Hat, Alta., where, utilizing the cheap gas fuel, they are manufactured into stoneware, sewer pipe, pottery, tableware, etc. Stoneware clay also occurs in Nova Scotia and, although it has not been developed extensively for ceramic use, some is used for pottery. Two large plants and a few small plants manufacture fireclay refractories from domestic clay in British Columbia, Saskatchewan and Nova Scotia. Deposits of high-grade, plastic, white burning clays occur in northern Ontario and deposits yielding high-grade china clay have been found along the Fraser River in British Columbia but these have not been used on a commercial scale, nor have the ball clays of high bond strength occurring in the white mud beds of southern Saskatchewan been developed to any extent.

31.—Value (Total Sales) of Clay Products Produced, by Province, 1953-62

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	\$	\$	\$	\$	\$
1953.....	39,500	1,234,319	620,769	8,070,942	14,829,222
1954.....	33,042	1,082,039	587,994	8,055,892	17,230,231
1955.....	49,338	1,196,868	704,025	8,451,362	18,314,320
1956.....	47,145	1,196,898	975,855	9,415,703	19,173,336
1957.....	29,500	1,345,361	803,169	8,898,855	18,353,299
1958.....	58,282	1,509,536	629,921	10,675,463	22,786,291
1959.....	68,000	1,638,789	743,966	10,374,162	22,174,895
1960.....	83,435	1,673,618	705,366	8,093,038	20,191,325
1961.....	75,890	1,582,153	744,293	8,195,790	19,036,556
1962p.....	140,000	1,645,654	737,325	7,625,076	19,956,263
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
	\$	\$	\$	\$	\$
1953.....	568,477	742,959	2,135,085	1,538,458	29,777,731
1954.....	512,989	844,398	2,316,982	1,696,731	32,360,098
1955.....	635,554	992,307	2,800,481	2,115,415	35,250,770
1956.....	754,503	1,064,071	3,038,544	2,128,955	37,784,080
1957.....	827,697	1,015,389	2,628,187	2,020,701	35,922,158
1958.....	682,943	1,158,803	2,569,170	1,639,494	41,709,903
1959.....	618,550	1,374,834	3,572,920	1,949,332	42,515,448
1960.....	813,135	1,130,332	3,551,682	1,984,607	38,228,538
1961.....	623,966	1,115,474	3,517,473	2,091,353	36,982,948
1962p.....	580,000	1,279,260	3,631,491	2,143,029	37,738,098

Section 5.—Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dominion Bureau of Statistics includes a general review of the principal mineral industries such as the copper-gold, silver-lead-zinc, and nickel-copper industries as well as a section on metallurgical works. Additional data published at irregular intervals include such features as numbers of employees, salaries and wages paid and net value added by processing.

The figures for 'net value added by processing' of industries given in Tables 32 and 33 are, in each table, the settlements received for shipments by producers and the additional values obtained when the smelting of ores is completed in Canada, less the cost of materials, fuel, etc. The totals indicate more nearly the actual returns to the different industries than do the values for the minerals in Table 5, p. 559 where, with respect to copper, lead, zinc and silver, values are computed by applying the average prices for the year in the principal metal markets to the total production from mines and smelters with no reduction for fuel, electricity and other supplies consumed in the production process.

Some imported ores and concentrates are treated in Canadian non-ferrous smelting and refining works, especially in the production of aluminum, where imported ore only is used, and of cobalt which is derived mainly from African ores. The net shipments of these metals include, therefore, the net value of the metals recovered from these imported ores and to this extent the net values added shown in Tables 32 and 33 include products of other than Canadian origin.

32.—Summary Statistics of the Mineral Industry, by Province, 1961

NOTE.—The figures in this table are not comparable with those given for earlier years in previous editions of the Year Book.

Province or Territory	Plants or Establishments	Em- ployees	Salaries and Wages	Cost of Process Supplies, Fuel, Electricity, Freight and Smelter Charges	Net Value Added by Processing
	No.	No.	\$	\$	\$
Newfoundland.....	22	4,293	20,967,991	30,660,495	53,752,858
Prince Edward Island.....	4	2	1,972	2,349	124,561
Nova Scotia.....	54	8,322	27,298,520	12,807,718	45,489,321
New Brunswick.....	57	1,460	4,730,053	3,144,402	7,724,621
Quebec.....	665	22,795	104,389,513	129,797,068	231,962,471
Ontario.....	667	35,125	172,860,677	106,414,737	414,012,771
Manitoba.....	75	3,306	16,866,255	7,645,576	34,060,271
Saskatchewan.....	183	3,667	20,311,916	11,936,713	162,207,871
Alberta.....	332	4,985	26,070,299	44,050,536	460,199,331
British Columbia.....	243	6,500	32,716,341	52,174,892	95,501,721
Northwest Territories.....	14	975	5,708,328	2,992,061	14,828,081
Yukon Territory.....	27	719	4,256,748	2,500,053	9,125,871
Canada.....	2,343	92,149	436,178,613	404,126,600	1,528,989,471

A summary of the industrial statistics of the principal mineral industries operating in Canada in the year 1961 is presented in Table 33.

33.—Summary Statistics of the Principal Mineral Industries, 1961

NOTE.—The figures in this table are not comparable with those given for earlier years in previous editions of the Year Book.

Industry	Plants or Establishments	Em- ployees	Salaries and Wages	Cost of Process Supplies, Fuel, Electricity, Freight and Smelter Charges	Net Value Added by Processing
	No.	No.	\$	\$	\$
Metallics.....	704	59,597	298,760,653	288,298,257	662,631,621
Placer gold.....	47	243	1,326,147	211,065	2,254,741
Gold quartz.....	140	15,876	65,465,515	28,154,371	106,879,121
Copper-gold-silver.....	276	10,901	51,455,158	91,415,366	81,047,861
Silver-cobalt.....	20	560	2,216,805	1,091,569	3,424,111
Silver-lead-zinc.....	73	4,352	22,098,610	49,749,740	61,422,491
Nickel-copper.....	50	13,697	74,754,694	25,381,964	109,350,211
Iron.....	55	8,049	47,107,661	61,744,237	124,588,721
Miscellaneous metals.....	43	5,919	34,332,063	30,549,955	170,664,261
Non-metallics.....	175	11,282	51,162,835	34,514,027	151,727,841
Asbestos.....	23	6,875	35,093,133	21,311,778	112,095,311
Feldspar, quartz and nepheline syenite.....	23	339	1,312,770	974,935	3,820,231
Gypsum.....	9	613	2,272,477	1,763,451	4,833,941
Mica.....	30	34	58,258	17,317	110,871
Peat.....	42	1,332	3,528,474	2,550,040	7,001,731
Salt.....	9	912	3,950,358	4,177,693	15,390,221
Talc and soapstone.....	4	79	264,622	124,140	612,201
Miscellaneous non-metallics.....	35	1,098	4,682,743	3,594,673	7,863,001
Fuels.....	743	15,362	63,733,107	70,016,958	641,780,411
Coal.....	113	10,461	35,607,905	14,142,188	58,067,771
Natural gas processing.....	49	744	4,477,319	41,371,321	30,648,661
Petroleum and natural gas.....	581	4,157	23,647,883	14,503,449	547,063,901
Structural Materials.....	721	5,908	22,522,018	11,297,358	72,849,501
Sand and gravel.....	493	2,513	9,898,545	3,717,478	35,720,501
Stone.....	228	3,395	12,623,473	7,579,880	37,129,001
Grand Totals.....	2,343	92,149	436,178,613	404,126,600	1,528,989,471

Section 6.—World Production of Certain Metallic Minerals and Fuels

Table 34 shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1961. These figures are taken from the *United Nations Statistical Yearbook 1962* which presents production figures for a much more extensive list of mining and quarrying industries. The 1961 figures are provisional and have been converted from kilograms to ounces troy for gold, from metric tons to ounces troy for silver, and from metric tons to short tons for the other metals and fuels shown.

34.—World Production of Certain Metallic Minerals and Fuels, 1961

NOTE.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nations Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz. t.	'000 oz. t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Afghanistan.....	—	—	—	—	—	—	72.8	—
Albania.....	—	—	—	—	—	—	—	714.3
Algeria.....	—	—	0.7	1,643.5	10.0	46.3	86.0	17,261.1
Angola.....	—	—	1.0	519.2	—	—	—	114.6
Argentina.....	—	1,414.6	—	—	30.5	33.3	379.2	13,321.4
Australia.....	1,070.5	—	105.9	3,851.5	302.1	322.8	26,957.0	—
Austria.....	—	—	2.2	1,272.1	6.7	9.0	116.8	2,597.0
Azerbaijan.....	—	—	—	—	—	—	—	2,478.0
Bahamas.....	0.3	—	—	—	—	—	—	—
Bangladesh.....	—	—	—	43.0	—	—	23,742.7	—
Brazil.....	29.0	3,890.2 ¹	2.3 ¹	—	22.4 ¹	5.8 ¹	—	411.2
British Guiana.....	121.0	—	2.3	7,000.8	109.3	—	2,425.1	5,014.4
Bulgaria.....	—	—	—	4,995.7	1.7	—	213,320.3 ²	166.4
Burkina Faso.....	1.6	—	—	—	—	—	—	—
Burundi.....	—	—	—	—	—	—	—	4,545.9
Cameroon.....	—	1,369.6	16.8	212.7	100.0	81.5	651.5	228.2
Canada.....	—	0.1	0.1	—	17.9	8.0	2.2	622.8
Central African Republic.....	0.5	—	—	—	—	—	—	—
Chad.....	4,473.7	31,382.0	439.1	20,359.0	230.4	416.0	10,397.7	32,851.2
Chile.....	0.1	—	—	—	—	—	—	—
China (Taiwan only).....	52.5	1,736.1	599.0	4,855.7	2.2	0.2	1,835.3	1,331.6
Colombia.....	17.5	—	2.4	—	—	—	4,670.5	2.2
Congo.....	378.9	128.6	—	300.9	—	—	2,976.2	8,076.6
Cote d'Ivoire.....	—	—	—	—	—	—	—	—
Czechoslovakia.....	3.4	—	—	—	0.8	—	—	113.5
Dominican Republic.....	233.4	3,472.3	325.4	—	—	109.2	80.5	—
Dominican Republic.....	—	—	9.9	3.3	—	—	—	11.0
Dominican Republic.....	—	—	31.6	—	—	—	—	—
Dominican Republic.....	—	—	—	1,099.0	—	—	29,081.2	165.3
Dominican Republic.....	—	—	—	103.6	—	—	—	—
Dominican Republic.....	15.2	38.6	—	—	—	—	—	425.5
Dominican Republic.....	5.5	—	—	—	—	—	—	—
Dominican Republic.....	83.4	—	—	6.6	—	—	—	—
Dominican Republic.....	20.6	456.5	—	203.9	—	—	—	—
Dominican Republic.....	47.6	2,594.6	—	23,851.8	20.8	17.2	57,714.8	2,385.4
Dominican Republic.....	7.9 ¹	—	—	—	—	—	—	—
Dominican Republic.....	15.3	—	—	—	—	—	—	853.2
Dominican Republic.....	—	—	—	—	—	—	—	—
Dominican Republic.....	—	—	27.6	543.4	—	—	2,944.3	—
Dominican Republic.....	81.3	16,181.5	1.9	4,879.9	54.7	96.2	158,308.4	6,839.8
Dominican Republic.....	833.0	—	—	—	—	—	—	—
Dominican Republic.....	—	112.5	—	165.3	10.8	17.2	—	—
Dominican Republic.....	—	—	—	—	10.1	7.5	33.1	—
Dominican Republic.....	—	—	—	—	9.5	8.7	—	—
Dominican Republic.....	1.7 ¹	3.2 ¹	—	—	6.7	6.8 ⁴	—	—
Dominican Republic.....	—	—	—	73.9	—	—	—	—
Dominican Republic.....	—	—	—	176.4	—	—	3,385.2	1,606.1
Dominican Republic.....	153.3	189.7	10.3	8,262.9	4.6	6.1	61,801.1	576.5
Dominican Republic.....	—	—	—	44.1	—	—	605.2	23,461.6
Dominican Republic.....	—	—	—	—	—	—	278.9	64,409.1
Dominican Republic.....	—	—	6.5	—	—	—	—	54,013.2
Dominican Republic.....	—	—	—	—	0.9	0.8	219.4	—
Dominican Republic.....	—	—	—	—	—	—	—	—
Dominican Republic.....	0.7	974.2	—	643.7	52.7	142.2	816.8	153.2
Dominican Republic.....	378.9	12,513.1	106.3	1,757.1	51.0	185.5	60,058.3	2,172.7
Dominican Republic.....	—	—	—	—	—	—	—	724.2

For footnotes, see end of table, p. 580.

34.—World Production of Certain Metallic Minerals and Fuels, 1961—concluded

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz.t.	'000 oz.t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Kenya.....	12.3	—	—	—	—	—	—	—
Korea—	—	—	—	—	—	—	—	—
North.....	—	—	—	—	—	—	7,716.2	—
Republic of.....	83.6	459.8	0.4	274.5	1.0	0.4	6,486.0	—
Kuwait.....	—	—	—	—	—	—	—	91,133.
Kuwait (neutral zone)....	—	—	—	—	—	—	—	10,383.
Liberia.....	2.1	—	—	2,400.8	—	—	—	—
Libya.....	—	—	—	—	—	—	—	754.
Luxembourg.....	—	—	—	2,239.9	—	—	—	—
Madagascar.....	0.4	—	—	—	—	—	2.2	—
Malaya, Federation of....	11.2	—	—	4,223.0	—	—	—	—
Mexico.....	268.7	40,349.2	54.3	757.3	199.8	296.5	1,171.8	16,841.
Mongolia.....	—	—	—	—	—	—	825.6	—
Morocco.....	—	900.2	1.9	898.4	97.3	44.4	451.9	88.
Mozambique.....	0.1	—	—	—	—	—	353.8	—
Netherlands.....	—	—	—	—	—	—	13,912.3	2,255.
New Caledonia.....	—	—	—	172.0	—	—	—	—
New Guinea (Australia)...	41.8	32.2	—	—	—	—	—	—
New Zealand.....	28.3	—	—	1.1	—	—	843.3	1.
Nicaragua.....	224.6 ¹	—	—	—	—	—	—	—
Nigeria.....	0.5	—	—	—	—	—	669.1	2,538.
Norway.....	—	—	15.1	1,166.2	2.5	10.3	399.0	—
Pakistan.....	—	—	—	1.1	—	—	1,015.2	416.
Peru.....	133.6	33,581.4	217.5	3,369.8	150.8	191.7	184.1	2,855.
Philippines.....	424.0	794.1	65.8	723.1	0.1	3.6	167.6	—
Poland.....	—	—	13.3	740.8	42.1	153.9	117,513.0	223.
Portugal.....	—	—	3.3	138.7	—	—	518.1	—
Qatar.....	—	—	—	—	—	—	—	9,237.
Rhodesia and Nyasaland,	—	—	—	—	—	—	—	—
Federation of—	—	—	—	—	—	—	—	—
Northern Rhodesia....	4.3	742.7	627.1	—	17.0	33.4	—	—
Southern Rhodesia....	570.1	106.1	15.2	248.0	—	—	3,387.4	—
Romania.....	—	—	—	862.0	13.2	—	5,403.5	12,767.
Sarawak.....	4.1	—	—	—	—	—	—	66.
Saudi Arabia.....	—	—	—	—	—	—	—	76,315.
Senegal.....	—	—	—	—	—	—	—	2.
Sierra Leone.....	—	—	—	1,220.3 ¹	—	—	—	—
South Africa.....	22,941.4	2,289.1	57.3	2,788.8	0.1	—	43,611.8	—
South West Africa.....	—	1,832.6	27.6	—	69.3	21.8	—	—
Spain.....	—	—	11.1	3,265.0	91.5	97.7	15,207.5	—
Sudan.....	1.5	—	—	—	—	—	—	—
Surinam.....	4.0	—	—	—	—	—	—	—
Swaziland.....	1.3	—	—	—	—	—	—	—
Sweden.....	83.2	2,826.1	19.1	15,576.8	71.0	86.9	218.3	—
Switzerland.....	—	—	—	37.5	—	—	—	—
Tanganyika.....	100.1	—	0.1 ¹	—	0.4 ¹	—	2.2	—
Thailand.....	—	—	—	40.8	2.4	—	—	—
Trinidad and Tobago....	—	—	—	—	—	—	—	7,200.
Tunisia.....	—	70.7	—	499.3	18.5	3.7	—	—
Turkey.....	—	—	22.0	469.6	3.0	9.9	4,157.9	456.
Uganda.....	0.4 ¹	—	14.8	—	—	—	—	—
Union of Soviet Socialist	—	—	—	—	—	—	—	—
Republics.....	—	—	—	75,442.2	—	—	415,592.2	183,058.
United Arab Republic....	—	—	—	232.6	—	—	—	4,209.
United States.....	1,566.8	34,899.6	1,165.1	43,181.9	261.9	464.4	417,405.5	390,552.
Venezuela.....	30.1	—	—	10,275.7	—	—	34.2	171,837.
Viet Nam—	—	—	—	—	—	—	—	—
North.....	—	—	—	—	—	—	3,098.6	—
Republic of.....	—	—	—	—	—	—	62.8	—
West New Guinea.....	—	—	—	—	—	—	—	184.
Yugoslavia.....	67.9	3,453.0	41.8	841.1	106.6	66.0	1,447.3	1,478.

¹ Exports.² Excludes Northern Ireland.³ Final DBS figures.⁴ Exports to United States.

CHAPTER XII.—POWER GENERATION AND UTILIZATION

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found facing p. 1 of this volume.*

Section 1.—Water Power Resources—Available and Developed

Canada, a land of many large lakes and fast-flowing rivers, is richly endowed with immense water power resources. With the exception of the prairies of the mid-west, these sources are found in considerable magnitude in almost every part of the country.

British Columbia, traversed by three distinct mountain ranges and with, generally speaking, a high rate of precipitation, has many mountain rivers which offer abundant opportunity for the development of hydro-electric power. Notable for their power potential are such rivers as the Columbia, the Fraser, the Peace and the Stikine. Up to the present time, however, hydro-electric developments on smaller rivers in the southern part of British Columbia have supplied the province's major load requirements. The immense water resources of the larger rivers have gone unused, chiefly because of remoteness from present demand areas or because of conflicts of interest between fisheries and power development. The water power resources of British Columbia, in total magnitude the second largest in Canada, have played and will continue to play a very important part in the development of the province.

Important water power sites await development on the Yukon River in the Yukon Territory and on the South Nahanni River in the Northwest Territories. Indications are that the rivers draining the District of Keewatin, north of Manitoba, will also contribute materially to the total power potential of the Northwest Territories. In view of the lack of developed native fuel sources and difficulties in transportation, water power is of special importance in the development of mining areas such as those at Yellowknife in the Northwest Territories and at Mayo in the Yukon Territory.

Of the three Prairie Provinces, Manitoba has the greatest water power potential. For many years, the more heavily populated southern region of the province has been supplied from hydro-electric developments on the Winnipeg River. With the advent of high-voltage, long-distance transmission, however, power from hydro-electric stations on northern rivers will flow south to help meet the constantly growing demands of industrial, urban and rural users. In both Alberta and Saskatchewan, abundant reserves of coal, oil and natural gas are used to fuel the thermal-electric plants which satisfy much of the demand for power in these provinces. In Alberta, the principal existing hydro-electric developments are located on the Bow River and its tributaries, but there are substantial

power resources in northern regions of the province, too remote from urban centres to warrant development at the present time. In Saskatchewan, existing hydro-electric plants are located in northern areas and their output is used almost exclusively for mining purposes. Water power sites of considerable importance remain to be developed in the central and northern parts of the province. Thermal-electric power feeding the transmission network serving the more settled areas will be augmented in 1963 by hydro-electric power from new developments on the Saskatchewan River.

The pace of industrial expansion in Ontario since the turn of the present century has made heavy demands on the province's substantial water power potential, to the extent that hydro-electric installed capacity in Ontario is exceeded in total magnitude only by that of Quebec. The largest hydro-electric development in the province is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara Generating Station: Nos. 1 and 2 and the associated pumping-generating station have a combined capacity of 2,521,000 hp. Completion of development of most of Ontario's water power sites located within economic reach of demand areas has led, within the past few years, to an increasing dependence upon electric energy generated in thermal plants. An important contributing factor is the growing recognition of the benefits offered by integrating the operation of hydro and thermal plants. Despite this growing emphasis on thermal power development of a number of the province's more remote hydro sites is now considered economically feasible, largely as a result of recent marked advances in extra-high-voltage long-distance transmission techniques. Several of these sites are under construction.

With more than 30 p.c. of the national recorded total, Quebec's water power resources are the most extensive in the country. Quebec leads the other provinces also in terms of installed turbine capacity with a total installation of 12,816,845 hp.—more than 47 p.c. of the total for all of Canada. The greatest concentration of hydro-electric capacity in one plant in Canada is installed in the 2,145,000-hp. Beauharnois development on the St. Lawrence River. Notable also are the Bersimis I development on the Bersimis River and the Shipshaw plant on the Saguenay River, each with an installed capacity of 1,200,000 hp. A major power scheme involving the harnessing of the headwaters of the Manicouaga and Outardes Rivers is under construction. The completed project will make available nearly 6,000,000 hp. of additional capacity at new and existing developments on the two rivers.

The water power resources of New Brunswick and Nova Scotia, although small in comparison with those of other provinces, are a valuable source of energy. Numerous rivers in both provinces provide moderate-sized power sites advantageously situated for urban or rural use. In Prince Edward Island, there are no large streams and, consequently, water power plants are limited in size to those used for small mills. Topography and runoff conditions on the Island of Newfoundland are favourable for the development of power, even though river drainage areas are generally not large. Considerable power development has taken place on the Island, mainly to serve the pulp and paper industry. Labrador has what is considered to be one of the largest sources of water power in Canada in the Hamilton River and its tributaries.

An accurate comparison of the magnitude and state of development of Canada's water power resources with those of other countries is not possible because world statistics are incomplete and are not tabulated on the same basis. Available information would indicate, however, that Canada is exceeded only by the United States in the total amount of hydraulic turbine capacity actually installed. In terms of installed water power capacity per thousand population, Canada is second only to Norway. It is interesting to note that, with the exception of those of the United States, Canada's water power resources, fifth in order of magnitude, are more readily available to prospective markets than is the case in any of the countries that have greater power potential.

Table 1 gives, by province or territory, the estimated total water power resources of Canada and the total existing capacity of all water power plants.

1.—Available and Developed Water Power, by Province, as at Jan. 1, 1963

Province or Territory	Available 24-Hour Power at 80 p.c. Efficiency		Turbine Installation
	At Ordinary Minimum Flow	At Ordinary Six-Month Flow	
	hp.	hp.	hp.
Newfoundland.....	1,608,000	3,264,000	504,025
Prince Edward Island.....	500	3,000	1,660
Nova Scotia.....	30,500	177,000	204,538
New Brunswick.....	123,000	334,000	309,726
Quebec.....	12,557,000	23,711,000	12,816,845
Ontario.....	5,496,000	7,701,000	7,959,512
Manitoba.....	4,758,000	8,454,000	988,900
Saskatchewan.....	552,000	1,131,000	142,135
Alberta.....	911,000	2,453,000	414,455
British Columbia.....	18,200,000 ¹	19,400,000 ¹	3,701,326
Yukon Territory.....	4,678,000 ¹	4,700,000 ¹	38,190
Northwest Territories.....	1,367,000 ¹	1,795,000 ¹	22,250
Canada.....	50,281,000	73,123,000	27,103,562

¹ Reflects the effect of possible stream-flow regulation based on known storage potentials.

The figures in the first and second columns of Table 1 represent continuous 24-hour power based on available data on stream flow and hydraulic head at individual sites. The hydraulic head used is the feasible concentration of head, which has been measured or at least estimated at existing falls, rapids and known power sites. No consideration has been given to possible economic concentrations of head on rivers and streams of gradual gradient, except at those locations where the available head has been definitely established by field investigations.

It should be emphasized that the figures of available power represent only the minimum water power possibilities of Canada. Many unrecorded power sites exist on rivers and streams throughout the country, particularly in the less-explored northerly districts. As power surveys are extended, detailed information on new sites will become available and, undoubtedly, substantial additions to present figures of available power will result. With the exception of British Columbia, Yukon Territory and the Northwest Territories, estimates of available power are based upon existing river flows and do not take into account the benefits of stream-flow regulation that would result from the development of storage potential. In addition, the figures of available power do not include the power potential of major river diversions that have been investigated but not developed.

The figures in the third column of Table 1 are the totals of plant capacities based upon the manufacturer's rating as indicated on the name-plate of each unit. In a few cases where, subsequent to installation of the unit, a change in the normal operating head has been effected, a rating based on the new normal operating head is used. The maximum economic turbine installation at any power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is the usual practice, however, to install turbines with a total capacity in excess of the power equivalent of the ordinary six-month flow at the site. This additional capacity may be installed for use at peak-load hours or to facilitate plant or system maintenance, or to take advantage of high river flow.

The extent to which the installed capacity exceeds the power equivalent of the ordinary six-month flow depends upon the factors that govern the system of power-plant operation, and varies widely in different parts of the country. In some developments, the difference

may amount to as much as several hundred per cent. For this reason, the figures in the third column of Table 1 are not directly comparable with those in column two. For the same reason, it is not feasible to forecast future capacity installation on the basis of estimates of available water power.

The steady growth of hydraulic turbine capacity is shown in Table 2. The average annual growth of 56,000 hp. in the period 1900-05 increased sharply to about 150,000 hp. per annum in the 1906-22 period, largely as a result of improvements in electric power transmission and of the construction of large hydro-electric stations. Because of the heavier demand for electricity during the prosperous 1920's, the rate of installation increased appreciably in 1923 and continued at a nearly uniform rate of 377,000 hp. per annum until 1935. Conditions resulting from the economic depression of the early 1930's were responsible for a decrease in construction starts and the comparatively low rate of installation during the period 1936-39. The wartime demand for power accelerated the installation rate to an average of 481,000 hp. per annum for the period 1940-43. Few new developments were started in the later war years or in the immediate postwar period so that from 1944 to 1947 only a small amount of new capacity came into operation. However, the program of construction of hydro-electric power plants gained momentum soon after the War and the results are apparent in the substantial growth in new capacity brought into service during the period 1948-60, when the average annual rate of installation exceeded 1,200,000 hp. In sharp contrast to this high average rate are the comparatively moderate net totals of 294,650 hp.* and 415,468 hp. of new capacity put into service in 1961 and 1962, respectively. A return to the former high rate of installation can be expected in 1963, however, when a number of new hydro-electric projects will be completed.

The availability of large amounts of low-cost hydro-electric energy has been an essential factor in the development of Canadian industry. Power from hydro-electric plants ranging in capacity from a few hundred horsepower to more than a million horsepower is carried via transmission line networks to urban centres and rural districts. The ability to transmit power over relatively long distances has facilitated the decentralization of industry and has enabled manufacturers to carry on operations in many of the smaller centres of population.

* Does not reflect an increase of 60,000 hp. brought about by the re-rating of an existing plant in Quebec.

2.—Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-62

NOTE.—Figures for the years 1900-30 are given in the 1939 Year Book, p. 362; for 1931-39 in the 1946 edition, p. 362; and for 1940-49 in the 1954 edition, pp. 556-557.

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	hp.	hp.	hp.	hp.	hp.	hp.
1900.....	—	1,521	19,810	4,601	82,864	53,876
1910.....	—	1,760	31,476	11,197	334,763	490,821
1920.....	—	2,233	37,623	21,976	955,090	1,057,422
1930.....	—	2,439	114,224	133,681	2,718,130	2,088,055
1940.....	—	2,617	139,217	133,347	4,320,943	2,597,595
1950.....	262,810	2,299	160,960	133,111	6,372,812	3,513,840
1951.....	279,160	2,299	150,960	132,911	6,755,351	3,718,505
1952.....	292,660	2,299	162,455	135,511	7,263,621	3,948,466
1953.....	311,150	1,900	162,433	164,130	7,719,122	4,006,686
1954.....	323,150	1,882	170,908	164,130	7,773,822	4,845,486
1955.....	329,150	1,882	177,018	164,130	7,975,667	5,367,866
1956.....	336,750	1,882	179,718	164,130	8,489,957	5,443,766
1957.....	337,970	1,882	181,958	209,130	8,979,857	5,824,766
1958.....	368,935	1,660	183,168	254,375	9,857,007	7,150,851
1959.....	370,925	1,660	184,538	254,258	11,263,045	7,788,062
1960.....	384,025	1,660	184,538	254,258	12,440,145	7,814,562
1961.....	384,025	1,660	204,538	254,258	12,576,845	7,959,512
1962.....	504,025	1,660	204,538	309,726	12,816,845	7,959,512

2.—Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-62—concluded

Year	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	hp.	hp.	hp.	hp.	hp.	hp.
1900.....	1,000	—	280	9,366	5	173,323
1910.....	38,800	30	655	64,474	3,195	977,171
1920.....	85,325	35	33,122	309,534	13,199	2,515,559
1930.....	311,925	42,035	70,532	630,792	13,199	6,125,012
1940.....	420,925	90,835	71,997	788,763	18,199	8,584,438
1950.....	595,200	111,835	107,225	1,284,208	28,450	12,562,750
1951.....	598,400	111,835	207,825	1,358,808	28,450	13,342,504
1952.....	716,900	111,835	207,825	1,432,858	31,450	14,305,880
1953.....	716,900	109,835	207,960	1,496,518	32,440	14,929,074
1954.....	758,900	109,835	258,710	2,246,868	32,440	16,684,131
1955.....	796,900	109,835	284,010	2,271,460	33,240	17,511,148
1956.....	796,900	109,835	285,010	2,514,960	33,240	18,356,148
1957.....	778,900	109,835	308,010	3,122,460	36,240	19,891,008
1958.....	778,900	109,835	312,595	3,310,460	51,240	22,379,626
1959.....	778,900	128,835	312,455	3,499,106	51,240	24,633,624
1960.....	946,900	132,135	414,455	3,700,326	60,440	26,333,444
1961.....	988,900	142,135	414,455	3,701,326	60,440	26,688,094
1962.....	988,900	142,135	414,455	3,701,326	60,440	27,103,562

Table 3 indicates the respective amounts of water power developed by utilities and by industrial establishments. For the purposes of this tabulation, utilities are defined as companies, municipalities or individuals who sell most of the power they develop. In some cases, they include also certain subsidiary companies whose main purpose is to develop and sell power to a parent company for industrial purposes. The total of 21,012,661 hp. of turbine capacity installed in plants operated by utilities on Jan. 1, 1963 represented 78 p.c. of Canada's total installed capacity.

Industries are defined as companies or individuals who develop power mainly for their own use. The total installed capacity of plants operated by industrial establishments on Jan. 1, 1963 was 6,090,901 hp. In addition to the power generated in their own plants, industries purchase a considerable amount from utilities.

The total hydraulic installation at the beginning of 1963 (27,103,562 hp.) is the total of all existing installations of water wheels and hydraulic turbines in Canada.

3.—Installed Water Power Capacity, by Province, as at Jan. 1, 1963

Province or Territory	Turbine Installation		Total
	Utilities ¹	Industries ²	
	hp.	hp.	hp.
Newfoundland.....	390,305	113,720	504,025
Prince Edward Island.....	240	1,420	1,660
Nova Scotia.....	189,345	15,193	204,538
New Brunswick.....	283,408	26,318	309,726
Quebec.....	9,159,678	3,657,167	12,816,845
Ontario.....	7,516,110	443,402	7,959,512
Manitoba.....	973,000	15,900	988,900
Saskatchewan.....	125,500	16,635	142,135
Alberta.....	413,390	1,065	414,455
British Columbia.....	1,920,945	1,780,381	3,701,326
Yukon and Northwest Territories.....	40,740	19,700	60,440
Canada.....	21,012,661	6,090,901	27,103,562
Percentage of total installation.....	78	22	100

¹ Includes only hydro-electric installations that develop power mainly for sale.
² Includes only water power installations developed by industries mainly for their own use.

Section 2.—Power Generating Capability and Load Requirements*

Power generating *capability*, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the *capacity* of such generating facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the time of peak-load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate since 1950. The annual rate of increase was 8.2 p.c. in the eleven-year period 1951-62 and 6.4 p.c. in the period 1958-62. In comparison, the forecast rate of growth for the years 1963-66 is only 4.8 p.c.; thermal generating capability is expected to grow at the average rate of 9.8 p.c. a year in the forecast period compared with 15.7 p.c. in the period 1951-62, but hydro-electric capability is expected to increase at only 3.5 p.c. a year compared with 6.8 p.c. in the 1951-62 period.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric generating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability, followed by Alberta and British Columbia. The first nuclear capability is scheduled for 1965.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario, amounting to 1,985,000 kw., followed by Quebec 1,427,000 kw., Alberta 498,000 kw., and British Columbia 379,000 kw. Quebec will meet most of its increased generating capability by adding over 1,127,000 kw. in hydro capability and 300,000 kw. in thermal capability. Ontario will add 1,478,000 kw. thermal, including 200,000 kw. nuclear, and 508,000 kw. hydro, and Alberta will add 300,000 kw. hydro and 228,000 kw. thermal. Thus, it is apparent that thermal capability is becoming of greater importance, partly because of decreasing availability of hydro resources in provinces such as Ontario and partly because technological advances have made possible much more efficient use of thermal fuels in the operation of thermal base load plants.

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 7.0 p.c. a year from 1951 to 1962 but only 5.0 p.c. a year from 1958 to 1962; peak load demand is forecast to increase at the average rate of 6.5 p.c. a year in the period 1962-66. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net generating capability increased each year from 1951 to 1962, with the exception of 1961. The forecast is for increases in 1963 and 1964 and declines in 1965 and 1966. The reserve ratio as a percentage of firm power peak load, which reached a high of 28.2 p.c. in 1960, is expected to decrease to 18.8 p.c. in 1966, approximately the same as in 1958.

* Prepared by the Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

4.—Net Generating Capability, by Province, 1962

(Thousand kilowatts)

Type of Generating Facility	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
Hydro-electric.....	350	—	141	233	8,830	5,285
Thermal-electric—						
Steam.....	45	32	378	240	41	1,926
Internal combustion.....	14	5	2	7	12	12
Gas turbine.....	—	—	—	—	36	—
Totals.....	409	37	521	480	8,919	7,223

4.—Net Generating Capability, by Province, 1962—concluded

Type of Generating Facility	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
Hydro-electric.....	735	107	327	2,599	44	18,651
Thermal-electric—						
Steam.....	291	575	643	424	1	4,596
Internal combustion.....	7	37	33	112	10	251
Gas turbine.....	—	33	130	172	—	371
Totals	1,033	752	1,133	3,307	55	23,869

5.—Capability and Firm Power Peak Load Requirements, Actual 1951 and 1956-62 and Forecast 1963-66

(Thousand kilowatts)

Item	ACTUAL								FORECAST			
	1951	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Net Generating Capability—												
Hydro-electric.....	9,044	12,841	14,143	15,912	17,086	18,516	18,389	18,651	19,497	20,184	20,937	21,441
Steam—Conventional.....							3,648	4,596	5,377	5,993	6,268	6,728
Nuclear.....							—	—	—	—	200	200
Internal combustion.....	1,032	2,142	2,326	2,716	3,119	3,824	240	251	248	255	258	262
Gas turbine.....							351	371	376	379	379	397
Totals, Net Generating Capability	10,076	14,983	16,469	18,628	20,205	22,340	22,628	23,869	25,498	26,811	28,042	29,028
Receipts of firm power from United States.....	—	56	—	—	—	—	2	4	4	4	4	4
Deliveries of firm power to United States.....	175	147	150	152	152	166	146	121	118	69	70	56
Totals, Net Capability	9,901	11,892	16,319	18,476	20,053	22,174	22,484	23,752	25,384	26,746	27,976	28,976
Peak Loads—												
Firm power peak load within Canada.....	8,989	13,668	14,664	15,568	16,201	17,264	18,353	18,972	20,377	21,656	22,988	24,446
Indicated shortages.....	321	47	2	—	—	—	—	—	—	—	1	4
Totals, Indicated Peak Load within Canada	9,310	13,715	14,666	15,568	16,201	17,264	18,353	18,972	20,377	21,656	22,989	24,450
Indicated Reserve	591	1,177	1,653	2,908	3,852	4,910	4,131	4,780	5,007	5,090	4,987	4,526

Section 3.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back to 1956. Earlier reports, entitled *Central Electric Stations*, were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1945-55 shown in Table 6 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.

6.—Electric Energy Generated, by Type of Station 1945-61, and by Province 1960 and 1961

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1945.....	39,131,020	999,034	40,130,054	1954.....	62,572,316	3,364,124	65,936,440
1946.....	40,692,395	1,044,592	41,736,987	1955.....	69,478,003	3,432,589	72,910,592
1947.....	42,273,167	1,151,632	43,424,799	1956.....	73,524,583	4,479,770	78,004,353
1948.....	41,070,095	1,319,586	42,389,681	1956 ¹	81,839,968	6,543,333	88,383,301
1949.....	42,779,199	1,639,374	44,418,573	1957.....	83,373,220	7,665,860	91,042,080
1950.....	46,624,218	1,869,500	48,493,718	1958.....	90,509,200	6,975,089	97,484,289
1951.....	52,955,002	1,896,842	54,851,844	1959.....	97,039,830	7,588,653	104,628,483
1952.....	57,023,530	2,385,668	59,409,198	1960.....	105,882,773	8,495,160	114,377,933
1953.....	58,926,462	3,934,465	62,860,927	1961.....	103,919,241	9,794,077	113,713,318
1960				1961			
Nfld.....	1,424,677	88,882	1,511,559	Nfld.....	1,320,552	137,008	1,457,560
P.E.I.....	415	79,037	79,452	P.E.I.....	407	88,150	88,557
N.S.....	655,164	1,158,769	1,813,933	N.S.....	544,010	1,317,123	1,861,133
N.B.....	816,105	922,273	1,738,378	N.B.....	1,020,737	891,400	1,912,137
Que.....	50,109,271	323,630	50,432,901	Que.....	49,547,805	307,790	49,855,595
Ont.....	34,948,511	866,553	35,815,064	Ont.....	33,737,126	1,216,464	34,953,590
Man.....	3,659,920	81,991	3,741,911	Man.....	3,589,242	257,367	3,846,609
Sask.....	621,829	1,581,996	2,203,825	Sask.....	659,971	1,885,133	2,545,104
Alta.....	886,595	2,556,813	3,443,408	Alta.....	1,017,731	2,752,745	3,770,474
B.C.....	12,600,494	807,889	13,408,383	B.C.....	12,299,630	904,823	13,204,453
Yukon and N.W.T.....	159,792	29,327	189,119	Yukon and N.W.T.....	182,030	36,074	218,104
Canada, 1960..	105,882,773	8,495,160	114,377,933	Canada, 1961..	103,919,241	9,794,077	113,713,318

¹ New series, see immediately preceding text.

Of the total generation in 1961 of 113,713,318,000 kwh., 91.4 p.c. was produced from water power and 8.6 p.c. was generated thermally; the proportions differed somewhat among provinces as shown in the following statement.

Province	Hydro	Thermal	Province or Territory	Hydro	Thermal
	p.c.	p.c.		p.c.	p.c.
Newfoundland.....	90.6	9.4	Manitoba.....	93.3	6.7
Prince Edward Island.....	0.5	99.5	Saskatchewan.....	25.9	74.1
Nova Scotia.....	29.2	70.8	Alberta.....	27.0	73.0
New Brunswick.....	53.4	46.6	British Columbia.....	93.1	6.9
Quebec.....	99.4	0.6	Yukon and N.W.T.....	83.5	16.5
Ontario.....	96.5	3.5			

Table 7 gives summary figures of power production and distribution classified by province, and Tables 8 and 9 give figures classified by type of production establishment. Total installed capacity in Canada amounted to 24,091,368 kw. in 1961, an increase of 1,056,366 kw. over 1960. Of the 1961 total, 15,180,154 kw. were accounted for by utilities and the remainder by industrial establishments. During 1960 and 1961 total sales to ultimate customers amounted to 76,829,969,000 kwh. and 79,874,233,000 kwh., respectively of which 99.7 p.c. was sold each year by utilities.

Sales to power customers made up 61.1 p.c. of the total in 1960 and 60.7 p.c. in 1961. Sales to domestic and farm customers were 26.5 p.c. and 27.5 p.c., and commercial sales 11.5 p.c. and 10.9 p.c. in the respective years. Exports to the United States in 1960 amounted to 4,139,686,000 kwh. compared with 5,495,572,000 kwh. in 1960.

7.—Summary Electric Power Statistics, by Province, 1960 and 1961

Year and Province or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers	Total Revenue from Ultimate Customers	Electric Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	\$'000	No.	\$'000
1960							
Newfoundland.....	313,694	1,426,845	—	67,152	10,722	602	2,000
Prince Edward Island..	37,360	79,452	—	22,002	2,544	172	621
Nova Scotia.....	506,865	1,733,333	—	197,021	28,753	1,603	6,256
New Brunswick.....	401,737	1,683,905	165,109	150,592	21,517	1,124	4,317
Quebec.....	8,920,347	44,002,303	569,074	1,393,973	215,020	10,133	45,203
Ontario.....	7,108,600	37,157,107	4,759,717	1,951,686	305,648	18,312	86,033
Manitoba.....	1,042,617	4,465,619	34	287,257	36,213	2,599	11,395
Saskatchewan.....	761,291	1,600,288	—	255,825	34,861	2,313	11,137
Alberta.....	915,281	3,475,306	—	355,707	52,645	1,749	8,994
British Columbia.....	2,963,117	13,425,952	1,638	501,947	93,922	2,267	13,196
Yukon and N.W.T.....	64,093	189,119	—	5,090	3,491	185	947
Canada, 1960.....	23,035,002	109,239,239	5,495,572	5,188,252	805,336	41,059	190,099
1961							
Newfoundland.....	322,237	1,382,336	—	70,750	11,264	600	2,297
Prince Edward Island..	37,396	88,557	—	23,541	2,812	177	675
Nova Scotia.....	520,248	1,776,692	—	204,611	30,774	1,567	6,530
New Brunswick.....	441,700	1,824,504	204,863	156,210	23,304	1,244	4,689
Quebec.....	9,138,934	43,767,356	406,814	1,455,449	228,046	10,365	48,879
Ontario.....	7,760,761	38,276,736	3,526,310	2,012,198	321,201	16,170	87,257
Manitoba.....	1,087,959	4,748,369	38	300,234	40,872	2,520	11,700
Saskatchewan.....	785,287	1,894,034	—	265,091	39,146	2,450	11,924
Alberta.....	931,529	3,794,730	—	367,941	57,470	1,737	9,099
British Columbia.....	3,000,011	13,180,221	1,661	513,734	100,033	2,335	14,111
Yukon and N.W.T.....	65,306	218,104	—	5,686	3,956	224	1,255
Canada, 1961.....	24,091,368	110,951,639	4,139,686	5,375,445	858,878	39,389	198,416

8.—Summary Electric Power Statistics, by Type of Establishment, 1960 and 1961

Year and Item	Electrical Utilities			Industrial Establishments	Total	
	Publicly Operated	Privately Operated	Total			
1960						
Installed generator capacity.....	kw.	12,532,652	5,886,097	18,418,749	4,616,253	23,035,002
Energy generated.....	'000 kwh.	57,850,106	31,227,034	89,077,140	25,300,793	114,377,933
Hydro.....	"	54,239,764	28,962,784	83,202,548	22,630,285	105,832,773
Thermal.....	"	3,610,342	2,264,250	5,874,592	2,620,568	8,495,160
Energy Made Available in Canada... '000 kwh.	..	..	..	..	..	109,239,239
Proportional of energy in Canada.....	'000 kwh.	54,217,662	31,945,958	86,163,620	214,464	86,378,084
Energy exported to United States.....	"	4,920,977	461,853	5,382,830	112,742	5,495,572
Domestic customers in Canada.....	No.	3,627,288	1,550,761	5,178,049	10,203	5,188,252
Commercial and farm.....	"	3,192,449	1,340,901	4,533,350	9,430	4,542,780
Industrial.....	"	365,106	168,882	533,988	708	534,696
Power.....	"	66,762	38,696	105,447	46	105,393
Street lighting.....	"	2,981	2,383	5,364	19	5,383
Revenue from ultimate customers.....	\$'000	529,341	274,105	803,446	1,890	805,336
Revenue from exports to United States.....	"	11,318	2,370	13,688	663	14,351
Employees.....	No.	30,559	10,500	41,059	..	..
Salaries and wages.....	\$'000	140,878	49,221	190,099	..	..

8.—Summary Electric Power Statistics, by Type of Establishment, 1960 and 1961—concluded

Year and Item	Electrical Utilities			Industrial Establishments	Total
	Publicly Operated	Privately Operated	Total		
1961					
Installed generator capacity.....	kw. 9,976,758	5,203,396	15,180,154	3,838,653	19,018,807
Energy generated.....	'000 kwh. 59,739,877	29,648,758	89,388,635	24,324,683	113,713,318
Hydro.....	" 65,170,410	27,155,454	82,325,864	21,593,377	103,919,241
Thermal.....	" 4,569,467	2,493,304	7,062,771	2,731,506	9,794,277
Energy Made Available in Canada... '000 kwh.	..	..	..	..	110,951,639
Disposal of energy in Canada.....	'000 kwh. 56,677,025	31,576,592	88,253,617	305,985	88,559,602
Energy exported to United States.....	" 3,481,345	543,103	4,024,448	115,238	4,139,686
Ultimate customers in Canada.....	No. 3,770,691	1,595,051	5,365,742	9,703	5,375,445
Domestic and farm.....	" 3,325,923	1,381,964	4,707,887	8,932	4,716,819
Commercial.....	" 371,664	175,734	547,398	713	548,111
Power.....	" 69,439	34,810	104,299	34	104,333
Street lighting.....	" 3,615	2,643	6,158	24	6,182
Revenue from ultimate customers....	\$'000 567,551	288,958	856,509	2,369	858,878
Revenue from exports to United States.	" 5,642	2,919	8,561	991	9,552
Employees.....	No. 28,884	10,505	39,389	..	..
Salaries and wages.....	\$'000 146,828	51,588	198,416	..	..

9.—Electric Power Generated classified by Type of Establishment, by Province, 1960 and 1961

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1960				
Newfoundland.....	10	1,083,702	427,847	1,511,559
Prince Edward Island.....	6,545	72,907	—	79,452
Nova Scotia.....	590,067	1,071,187	152,679	1,813,933
New Brunswick.....	1,107,090	65,850	565,438	1,738,378
Quebec.....	16,117,174	20,071,192	14,244,535	50,432,901
Ontario.....	31,931,862	1,704,943	2,178,259	35,815,064
Manitoba.....	3,690,486	—	51,425	3,741,911
Saskatchewan.....	1,516,926	586,155	100,744	2,203,825
Alberta.....	1,022,324	2,103,957	371,127	3,443,408
British Columbia.....	1,748,911	4,456,134	7,203,338	13,408,383
Yukon and Northwest Territories.....	118,711	11,007	59,401	189,119
Canada, 1960.....	57,850,106	31,227,034	25,300,793	114,377,933
1961				
Newfoundland.....	175	1,022,427	434,958	1,457,560
Prince Edward Island.....	7,269	81,288	—	88,557
Nova Scotia.....	589,137	1,106,686	165,310	1,861,133
New Brunswick.....	1,275,455	63,797	572,885	1,912,137
Quebec.....	17,896,450	18,173,915	13,785,230	49,855,595
Ontario.....	31,320,780	1,473,884	2,158,926	34,953,590
Manitoba.....	3,786,158	—	60,451	3,846,609
Saskatchewan.....	1,801,531	620,239	123,334	2,545,104
Alberta.....	1,091,039	2,360,203	319,234	3,770,476
British Columbia.....	1,825,184	4,733,244	6,646,025	13,204,453
Yukon and Northwest Territories.....	146,699	13,075	58,330	218,104
Canada, 1961.....	59,739,877	29,648,758	24,324,683	113,713,318

Average domestic and farm consumption rose from 4,489 kwh. in 1960 to 4,660 kwh. in 1961. Among the provinces, the averages in 1961 varied from a low of 1,332 kwh. in

Nova Scotia to a high of 9,169 kwh. in British Columbia. For domestic and farm customers the average annual bill was \$73.53 in 1961 as against \$71.75 in 1960, an increase of 2.5 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from 4,345 kwh. per customer in 1960 to 4,654 kwh. in 1961 and the average bill from \$96.49 to \$99.52.

10.—Domestic and Farm Service by Electrical Utilities and Industrial Establishments, 1939, 1945 and 1958-61

Item	1939	1945	1958	1959	1960	1961
Customers..... N ^o .	1,623,672	1,987,360	4,188,946	4,381,564	4,542,780	4,716,819
Kilowatt-hours sold..... '000	2,310,891	3,365,497	17,290,984	19,007,111	20,391,857	21,979,672
Revenue received..... \$'000	43,793	55,736	278,531	305,662	325,946	346,807
Kilowatt-hours per customer.. No.	1,423	1,693	4,128	4,338	4,489	4,660
Average annual bill..... \$	26.97	28.05	66.49	69.76	71.75	73.53
Revenue per kwh..... cts.	1.90	1.66	1.61	1.61	1.60	1.58

In 1961, natural gas accounted for 43.5 p.c. of thermal generation by utilities, coal for 41.6 p.c. and petroleum fuels for 14.9 p.c.; corresponding percentages in 1960 were 45.8 p.c., 41.1 p.c. and 13.1 p.c., respectively.

11.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1960 and 1961

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	Imp. gal.	\$	Mcf.	\$
1960						
Newfoundland.....	—	—	4,501,955	345,675	—	—
Prince Edward Island.....	—	—	7,026,967	465,383	—	—
Nova Scotia.....	493,916	5,203,562	12,115,327	814,190	—	—
New Brunswick.....	202,324	1,620,457	8,635,326	1,022,938	—	—
Quebec.....	—	—	2,343,068	364,943	—	—
Ontario.....	117,898	1,028,244	1,652,894	292,528	100,648	36,578
Manitoba.....	55,586	229,196	1,087,564	176,458	129,127	37,467
Saskatchewan.....	769,833	1,293,327	26,644,175	1,570,726	8,155,690	1,082,655
Alberta.....	208,592	316,850	1,639,773	135,082	27,876,986	3,549,288
British Columbia.....	—	—	4,908,510	902,978	1,678,277	438,759
Yukon and Northwest Territories...	—	—	1,151,817	304,949	—	—
Canada, 1960.....	1,846,149	9,791,636	71,707,376	6,395,850	37,940,728	5,144,747
1961						
Newfoundland.....	—	—	6,376,192	506,426	—	—
Prince Edward Island.....	—	—	7,684,587	510,779	—	—
Nova Scotia.....	504,071	5,393,919	19,330,109	1,223,384	—	—
New Brunswick.....	167,814	1,632,814	9,278,872	710,229	—	—
Quebec.....	—	—	2,936,700	458,449	—	—
Ontario.....	272,115	2,083,059	2,272,763	249,244	114,928	40,608
Manitoba.....	115,954	475,248	991,675	166,217	1,674,707	270,039
Saskatchewan.....	963,989	1,464,312	28,811,726	1,628,011	9,270,157	1,378,699
Alberta.....	229,455	375,526	3,078,048	182,586	28,058,763	4,081,333
British Columbia.....	—	—	4,708,311	843,111	2,134,637	553,227
Yukon and Northwest Territories...	—	—	1,767,870	435,979	—	—
Canada, 1961.....	2,253,398	11,424,878	87,236,853	6,924,415	41,253,192	6,323,906

Section 4.—Progress in the Development of Hydro-Electric and Thermal-Electric Facilities, 1962

During 1962, Canada's total electric power production capacity was expanded by the addition of 415,468 hp. of new hydro capacity and 713,210 kw. of new thermal capacity. This was the second consecutive year that thermal capacity put into service exceeded hydro capacity installed but this trend will be reversed in 1963 when approximately 1,200,000 hp. of hydro capacity and 660,000 kw. of thermal capacity will be added. Subsequent to 1963, power production facilities at present under construction or in the planning stage will yield almost 8,000,000 hp. of new hydro capacity and over 2,000,000 kw. of new thermal capacity.

Progress in construction of hydro-electric and thermal-electric plants during 1962 is outlined below, by province and territory.

Atlantic Provinces.—In Newfoundland, new power production facilities brought into service during 1962 consisted of 120,000 hp. of hydro capacity and 4,100 kw. of thermal capacity. Twin Falls Power Corporation Limited completed the initial stage, comprising two 60,000-hp. units, at the Twin Falls development on the Unknown River in Labrador and two other units of the same capacity will be added in 1963. The ultimate capacity of the site is expected to total 300,000 hp. in five units. Construction was started at the Newfoundland Light and Power Company Limited hydro development on Sandy Brook; the plant, scheduled to commence operation in 1963, will consist initially of a single 8,000-hp. unit. Southern Newfoundland Power and Development Limited is planning to construct a hydro-electric station on the Salmon River at Head Bay d'Espoir with an initial installation of 77,000 hp. in two units and an ultimate capacity of 350,000 hp. and Bowater Power Company Limited proposes to install a 54,000-hp. hydro-electric plant on Hinds Brook. Addition of a 1,000-kw. diesel unit at the Wabush Lake plant of Wabush Mines brought the capacity of that plant to 2,000 kw.; two additional 1,000-kw. units will be installed in 1963. United Towns Electric Company Limited added 1,240 kw. of diesel equipment at the St. George's plant and a total of 1,860 kw. of new diesel generating equipment was put into service by the Newfoundland Power Commission.

In Prince Edward Island, the capacity of the Summerside thermal plant was increased by the installation of a 2,200-kw. unit, bringing the total generating capacity of the plant to 7,281 kw. in nine units.

There was no increase in either hydro or thermal capacity in Nova Scotia in 1962, but the Nova Scotia Power Commission is actively considering the construction of two hydro-electric developments—a 10,800-hp. one-unit plant at Riverdale on the Sissiboo River, and a plant at Wreck Cove on Wreck Cove Brook with a possible ultimate capacity of 90,000 hp. Under consideration by Nova Scotia Light and Power Company Limited are a 7,500-hp. plant at Lequille on the Allain (Lequille) River and a 6,500-hp. Alpena plant on the Nictaux River.

In New Brunswick, the New Brunswick Electric Power Commission installed the third and final unit at Beechwood on the St. John River, the addition of this 55,000-hp. unit bringing the total capacity of the Beechwood plant to 145,000 hp. Capacity of the Commission's Milltown plant on the St. Croix River was raised to 4,200 hp. by the installation of a 468-hp. unit. Engineering studies were continued on the proposed 600,000-hp. Mactaquac development on the St. John River near Fredericton and attention was being given to the possibility of extending the 80,000-hp. Grand Falls development. A 47,500-kw. steam unit went into service at the Courtenay Bay Station in East Saint John, the ultimate generating capacity of which will be 300,000 kw. The addition of a 240-kw. unit increased total installation at the Grand Manan thermal plant to 990 kw. and, at Newcastle Creek on Grand Lake, work progressed on the installing of a 60,000-kw. unit for service in 1964.

Quebec.—In 1962, the pace of development of hydro-electric power resources in Quebec accelerated with a total of 240,000 hp. of new capacity put into service; in contrast, the province's total thermal capacity increased by only 80 kw. Estimates for 1963 indicate a total of 480,000 hp. of new hydro capacity and in subsequent years an additional 1,200,000 hp., exclusive of an estimated 627,000 hp. that could be added at two existing developments when construction of storage reservoirs associated with the Manicouagan scheme are completed. Thermal plants under construction or in the planning stage will make available 310,000 kw. of additional generating capacity within the next few years.

Quebec Hydro-Electric Commission's Carillon hydro development on the Ottawa River began initial service with 240,000 hp. in four units; Carillon should be complete in 1964 with a total capacity of 840,000 hp. in 14 units. Studies continued relating to proposed increase in generating facilities at the Commission's Rapid II plant on the upper Ottawa River, involving installation of a 16,000-hp. unit to bring the plant to an ultimate capacity of 61,000 hp. in four units. Construction progressed on the Commission's huge Manicouagan-Outardes development, which will make available some 3,650,000 hp. at three sites on the Manicouagan River and 1,440,000 hp. at two sites on the Outardes River. In addition, regulation from upstream reservoirs will permit the installation of as much as 627,000 hp. of new capacity at existing plants on the two rivers. At one of the sites on the Manicouagan River, a start was made on what will be one of the highest and most massive dams in the world. The structure, expected to take eight years to complete, will create a reservoir containing 115,000,000 acre-feet of water, covering a surface area of 800 sq. miles. Preliminary construction was begun at a second site on the Manicouagan River.

The Shawinigan Water and Power Company postponed indefinitely the construction of a 210,000-hp. development at Rapide des Coeurs on the St. Maurice River. Construction of a 300,000-kw. thermal plant at Tracy near Sorel progressed, with the first of two 10,000-kw. steam turbines scheduled to go into service in mid-1964.

Asbestos Corporation Limited announced tentative plans to build a 10,000-kw. diesel plant at Asbestos Hill in the Ungava region.

Ontario.—In 1962, a total of 320,000 kw. of new thermal capacity went into operation in Ontario; estimates for 1963 indicate a further 400,000 kw. and, for subsequent years, an increase of 1,100,000 kw. is forecast. For the first time in 17 years, the province's total hydro-electric capacity remained unchanged. On the basis of present information, however, new hydro capacity to go into service during the next few years will amount to as much as 1,496,000 hp., 288,000 hp. of which is scheduled for 1963.

The Hydro-Electric Power Commission of Ontario estimates that, over the next five years, power loads will increase at a compound rate of approximately 6 p.c. per annum. To meet these increasing loads, the Commission, during 1962, was engaged in the construction or planning of eight generating stations—four hydro-electric, two conventional thermal-electric, and two nuclear-electric. In addition, extensive engineering investigations were being carried out at a number of potential power sites on rivers in the James Bay watershed. Studies of the Madawaska River, to be completed in 1963, may indicate the possibility of developing another site on this river. Other potential sites within reach of present land areas are located on the Montreal, English and Mississagi Rivers.

There is considerable interest in Ontario in the development of pumped-storage installations such as the pumping-generating station at Niagara Falls. The units at this station can be used either as pumps or generators. Operating as pumps in off-peak periods, the units use surplus power from the Sir Adam Beck plant to raise water to a reservoir at a higher level. The process is reversed during periods of peak power demand and the units, operating as generators, are driven by water from the reservoir. Plans are being made to build a station of this type near Collingwood, where the storage reservoir would be filled by the use of off-peak power from the Douglas Point Nuclear Station. In this way, the best use would be made of the power produced in the nuclear station, which is designed to operate continuously at or near full capacity.

The hydro-electric stations under construction or in the planning stage during 1962 were the Otter Rapids station on the Abitibi River and the Little Long, Harmon and Kipling stations on the Mattagami River. The Otter Rapids station, with two 60,000-hp. units already in service, is being expanded by the addition of two similar units scheduled for service in 1963. The construction program for the Little Long station calls for installation of two 84,000-hp. units in 1963 and of two additional units at a later date. Two units of 94,000 hp. each are scheduled for installation at Harmon by 1965 with provision for two additional units, and at Kipling, two 94,000-hp. units should be in service in 1966, with provision for two additional units.

The two conventional thermal plants under construction in 1962 were the Commission's Lakeview station near Toronto and its Thunder Bay station at Fort William. A second 300,000-kw. unit was installed at Lakeview, bringing the total generating capacity to 600,000 kw.; unit 3 is scheduled to go into service in 1963, unit 4 in 1964, unit 5 in 1966 and unit 6 in 1967 or later. Ultimate capacity of the station will be 1,800,000 kw. At Thunder Bay, the 100,000-kw. unit is scheduled to go into service in 1963, after a number of modifications have been carried out.

The 20,000-kw. Nuclear Power Demonstration Station near Rolphton, Ont., was built as a joint undertaking by The Hydro-Electric Power Commission of Ontario, Atomic Energy of Canada Limited and the Canadian General Electric Company Limited. The station produced its first commercial electric power in June 1962 and since that time has performed satisfactorily. The success of its operation is a matter of widespread interest in many parts of the world. The Douglas Point Nuclear Station, now under construction on the shore of Lake Huron, is scheduled to go into service in 1965 with a generating capacity of 200,000 kw.

The Great Lakes Power Company is considering the development of a hydro-electric power site on the Montreal River. Installation at the plant would consist of a single 20,000-hp. unit, for operation in 1964. Also being considered by the Company is the addition of a third unit at the Lower Falls station on the Montreal River. Addition of this unit, rated at 21,000 kw., would raise the generating capacity of the plant to 37,200 kw.

Prairie Provinces.—In Manitoba, construction progressed at the site of Manitoba Hydro's Grand Rapids development on the Saskatchewan River; two 150,000-hp. units will go into service in 1964 and a third in 1965 and provision is being made for the eventual addition of a fourth unit. Engineering studies of potential sites on the Nelson River between Lake Winnipeg and Sipiwesik Lake were continued during the year. The addition of a 1,100-kw. diesel unit at The Pas generating station brought its total capacity to 5,250 kw. in five units and a thermal station housing two 40-kw. diesel units was built at Baker's Narrows, 20 miles south of Flin Flon, to serve the nearby airport.

In Saskatchewan, construction continued at Saskatchewan Power Corporation's Squaw Rapids development on the Saskatchewan River, the ultimate capacity of which will be 375,200 hp. in eight units. The first four units will be commissioned in 1963, two others in 1964 and two in 1966. The Prairie Farm Rehabilitation Administration of the Canada Department of Agriculture continued construction of the Saskatchewan River dam and reservoir at Coteau Creek. These are being provided primarily for irrigation purposes but hydro-electric generating facilities will be incorporated in the project by the Saskatchewan Power Corporation which plans an initial installation of three units and an ultimate installation of five units, each of approximately 60,000 hp. Two of the initial units are expected to be commissioned in 1967 and the third in 1968.

In Alberta, Calgary Power Limited continued construction at the Big Bend hydro site on the Brazeau River. The storage dam, creating a reservoir of 350,000 acre-feet, was completed and construction of the powerhouse eight miles downstream was well under way. A single 200,000-hp. unit is expected to be in service in 1964. It will be necessary to increase the height of the storage dam before additional units can be installed.

The company completed the installation of a 150,000-kw. gas turbine at the Wabamun plant, raising the installed capacity to 282,000 kw. in three units. The total generating capacity of the City of Edmonton's municipal thermal station will be increased to 330,000 kw. in May 1963 when a new 75,000-kw. steam unit goes into operation.

British Columbia.—In March 1962, as a result of legislation enacted by the Government of British Columbia, the British Columbia Power Commission and the British Columbia Electric Company Limited were amalgamated to form the provincial government agency known as the British Columbia Hydro and Power Authority.

Two contracts for preliminary projects associated with future development of the Peace River were completed in 1962, one involving construction of a 500-foot steel-arch access bridge near the Portage Mountain site and the other the driving of a pilot tunnel to obtain information for subsequent construction. First power from the Portage Mountain site is scheduled for 1968 and estimates indicate a feasible installation of approximately 4,200,000 hp. at two sites on the river.

The Power Authority continued its studies of the Duncan Lake, High Arrow and Nica developments. These three developments, which constitute the basis of the Columbia River Treaty signed on behalf of Canada and the United States in 1961, would be capable of controlling approximately 20,000,000 acre-feet of usable storage in Canada. The Treaty provides that Canada would receive half of the power benefits which result in the United States from the regulation of 15,500,000 acre-feet of this storage and half the value of the estimated flood damage prevented in the United States through operation of the projects for flood control. The Treaty had not yet been ratified by Canada by the end of 1962.

The Power Authority's Burrard thermal station near Vancouver went into operation in 1962 with one 150,000-kw. unit. A second unit with the same rating is scheduled for operation in 1963 and a third in 1964; ultimate capacity will be 900,000 kw. in six units. Increases in the capacities of a number of smaller thermal plants were reported in 1962: at Prince George, the addition of two units with a combined capacity of 2,000 kw. raised the total plant capacity to 23,000 kw.; at Chetwynd, two units totalling 1,800 kw. were added, bringing the total capacity of the plant to 3,000 kw.; and the capacity of the Alert Bay station on Vancouver Island was increased to 1,200 kw. by the addition of a 150-kw. unit. A new 1,200-kw. station went into service at Sandspit on the Queen Charlotte Islands.

Installation of the third unit at the Consolidated Mining and Smelting Company Limited Waneta hydro station on the Pend d'Oreille River, rated at 120,000 hp., will be in service in 1963 and will boost the total capacity of the plant to 360,000 hp. MacMillan, Bloedel and Powell River Limited completed the installation of a 25,000-kw. steam unit at the Port Alberni plant, raising the total capacity to 27,000 kw. The generating capacity of the Harmac plant at Nanaimo was raised to 5,250 kw. with the installation of a 4,000-kw. unit, and a 30,000-kw. unit will be installed at that plant in 1963. Bamfield Light and Power Company began initial service to the Bamfield area in the southwestern part of Vancouver Island with power from two 125-kw. generators. The City of Revelstoke carried out a survey in the Cranberry Creek watershed for the purpose of finding additional storage which would permit an increase in the capacity of the Cranberry Creek plant.

The Yukon and Northwest Territories.—In 1962, the net total of 3,100 kw. of thermal generating capacity put into service was confined to the Northwest Territories. The Northern Canada Power Commission installed a 600-kw. diesel unit at Fort Simpson and a 400-kw. unit at Fort Smith, bringing the total capacities of these plants to 1,075 kw. and 2,275 kw., respectively. Construction of a new power and central-heating plant was begun at Frobisher Bay in 1962; two new 1,000-kw. thermal units are being installed and two similar units transferred from the existing Frobisher Bay plant to give the new plant generating capacity of 4,000 kw. Four 250-kw. units remaining at the existing plant

will be operated by the Department of Transport for its own use. The Commission plans to install a 1,500-kw. diesel unit at the Inuvik plant in 1963, increasing its total capacity to 3,960 kw.

During the summer of 1962, an investigation was carried out of a hydro-electric power site on the Taltson River about 35 miles northeast of Fort Smith to determine the feasibility and the cost of developing the site as a source of power for the Fort Smith and Pine Point mines area. On the basis of this investigation, the Commission considers that an initial installation of 25,000 hp. is feasible.

Canada Tungsten Mining Corporation installed four diesel units with a total capacity of 1,600 kw. at its Flat River mining operation. At Hay River, Northland Utilities Limited installed a 652-kw. diesel unit and removed two units totalling 152 kw. from the plant.

Section 5.—Public Ownership and Regulation of Electrical Utilities*

Federal Government regulation of electrical utilities, particularly with respect to the export of electric power and the construction of lines over which such power is exported, falls within the jurisdiction of the National Energy Board established in November 1959 and concerned with all matters relating to energy resources within the jurisdiction of the Parliament of Canada (see Domestic Trade Chapter XIX, Part II, Section 4 for a brief survey of the functions and operations of the National Energy Board).

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 9, p. 590, giving statistics by type of establishment, shows that 53 p.c. of the total electric power generated in 1961 was produced by publicly operated utilities, 26 p.c. by privately operated utilities and 21 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output until recently was predominantly from privately owned plants while in Ontario almost all electric power is produced by a publicly owned utility. Figures for 1962 and subsequent years will show a much greater proportion of publicly operated electrical utilities since they will reflect the recent provincial take-over of privately owned facilities in both British Columbia and Quebec.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. Neither Newfoundland nor Prince Edward Island has a provincially operated electric power system, although in the former province a Commission, known as the Newfoundland Power Commission, was established by the provincial government in 1954 for the purpose of supplying electric power wherever needed throughout the province, particularly to rural areas. In Prince Edward Island, the town of Summerside and surrounding area is served by the municipally operated Town of Summerside Electric Light Department. The functions and activities of provincially operated electric power commissions in the other provinces are summarized in the following paragraphs.

Nova Scotia.—The Nova Scotia Power Commission was created under the Power Commission Act of 1919 with the function of supplying electric power and energy by the most economical means available. The Rural Electrification Act of 1937 greatly increased the possibilities for retail service by providing financial assistance to equalize cost and revenue of extensions approved by the Governor in Council. In 1941 an amendment to the Power Commission Act authorized the Commission, subject to the approval of the Governor in Council, to regulate and control the generation, transmission, distribution, supply and use of power in the province. Certain investigatory work is carried on in the province by the Federal Government in close association with the Commission, but the control of water resources is vested in the Crown and administered under the provisions of the Nova Scotia Water Act, 1919. The Commission pays regular fees for water rights.

* Revised by the various provincial commissions concerned.

Financially, the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1962 showed total fixed assets of \$67,223,873 including work in progress amounting to \$1,892,735. Current assets amounted to \$1,206,905 and liabilities were as follows: fixed \$56,433,139; current \$2,994,818; contingency and renewal reserves \$6,581,012; sinking fund reserves \$10,996,461; and general and special reserves \$3,007,507.

The initial development of the Commission was an 800-hp. installation on the Mushamush River which went into operation in 1921 and delivered 208,752 kwh. in the first complete year of operation. Succeeding years showed a marked growth in installed capacity, which at Nov. 30, 1961 reached 132,650 hp. in hydraulic turbines, 700 kw. in diesel units and 60,000 kw. in steam turbines.

The territory of the Commission extends over the entire province and embraces six systems which include 24 generating stations and more than 4,500 miles of transmission and distribution lines. No new power plant construction was undertaken in Nova Scotia during 1962.

12.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1962

System ¹ and First Year of Operation	Present Installed Capacity	Output	System ¹ and First Year of Operation	Present Installed Capacity	Output
	kw.	kwh.		kw.	kwh.
Western Network—			St. Margaret (1921).....	10,400	36,458,000
Harmony (1943).....	600	4,644,330	Mersey—		
Roseway (1930).....	888	3,977,680	Original development		
Gulch (1952).....	6,000	21,577,561	(1928).....	21,780	109,137,500
Ridge (1957).....	4,000	8,265,220	Cowie Falls (1938).....	7,200	42,639,200
Portable (diesel).....	200	2,730	Deep Brook (1950).....	9,000	48,264,500
Sissiboo (1960).....	6,000	26,091,400	Lower Great Brook (1955).....	4,500	20,742,850
Weymouth (1961).....	9,000	40,790,080	Canseau (diesel) (1937).....	700	17,280
Eastern Network—			Tusket (1929).....	2,160	13,000,723
Barrie Brook (1940).....	360	1,647,110			
Dickie Brook (1948).....	3,800	10,412,000	Totals.....	157,608	617,264,883
Malay Falls (1924).....	3,600	13,654,306			
Ruth Falls (1925).....	6,970	40,106,600			
Liscomb (1957).....	450	3,048,340			
Trenton (thermal) (1951).....	60,000	172,787,473			

¹ Hydro unless otherwise noted.

New Brunswick.—The New Brunswick Electric Power Commission was incorporated under the Electric Power Act, 1920. Generating stations owned by the Commission at Mar. 31, 1963 were as follows:—

Plant	Type	Capacity	Plant	Type	Capacity
		hp.			hp.
Grand Falls.....	Hydro.....	80,000	Courtenay Bay.....	Steam.....	63,800 ¹
Musquash.....	Hydro.....	9,320	Saint John (Dock St.).....	Steam.....	21,500 ¹
Tobique.....	Hydro.....	27,000	Chatham.....	Steam.....	43,600 ¹
Beechwood.....	Hydro.....	145,000	Grand Manan.....	Diesel.....	1,330 ¹
Milltown.....	Hydro.....	4,200			
Grand Lake.....	Steam.....	58,700 ¹	TOTAL CAPACITY.....		454,450

¹ Capacity rating of generators in kw. converted to hp.

All the above generating units with the exception of Grand Manan were interconnected in a province-wide grid system. The statistical information given in Table 13 shows the growth of the Commission's undertakings since 1959. Power plant construction completed under way in New Brunswick during 1962 is outlined at p. 592.

13.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1959-63

Item	1959	1960	1961	1962	1963
High-voltage transmission line...miles	1,272	1,396	1,585	1,744	1,845
Distribution line....." "	7,286	7,512	7,905	7,996	8,390
Direct customers.....No.	84,025	100,475	103,029	107,415	117,073
Plant capacities.....hp.	256,720	346,180	346,180	412,715	454,450
Power generated.....kwh.	751,714,180	1,184,798,350	1,273,719,910	1,425,489,140	1,644,740,890
Capital invested.....\$	104,511,683	132,844,276	148,280,363	156,190,514	176,859,403
Revenue.....\$	13,527,290	16,665,153	18,971,596	20,309,856	22,591,554

Quebec.—*The Quebec Streams Commission.*—Created by SQ 1910, c. 5, and given additional powers in 1912 (RSQ 1925, c. 46) and SQ 1930, c. 34, the Quebec Streams Commission was authorized to ascertain the water resources of the province, to make recommendations regarding their control, and to construct and operate certain storage dams to regulate the flow of streams. On Apr. 1, 1955, the Commission was abolished and its powers and attributions transferred to the provincial Hydraulic Resources Department. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the Chicoutimi, the Au Sable, and the Métis. The Commission also operated nine reservoirs on North River, two in the watershed of the Ste. Anne de Beaupré River, and one at the outlet of Lake Morin on Rivière du Loup (lower).

Other Reservoir Control.—Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River, and the Onatchiway on the Shipshaw River; Témiscouata Lake on the Madawaska River, controlled by the Gatineau Power Company; Memphremagog Lake on the Magog River, controlled by the Dominion Textile Company; Témiscamingue and Quinze Lakes on the Ottawa River, controlled by the federal Department of Public Works; Kipawa Lake on the Ottawa River, controlled by the Gatineau Power Company; and Lac Dozois on the upper Ottawa River, Lac Cassé in the Bersimis River watershed and Lac Ste. Anne on the Toulustouc River, a tributary of the Manicouagan River, controlled by the Quebec Hydro-Electric Commission.

Power developments on the Saguenay River, benefiting from the Peribonca and Lake St. John reservoirs, have a total capacity of 1,950,000 hp.

The Quebec Hydro-Electric Commission.—The Quebec Hydro-Electric Commission was established by SQ 1914, c. 22, with the object of supplying power to the municipalities, to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. The Commission at the end of 1962 controlled, among other assets, the following hydro-electric plants:*

Plant	River	Installed Capacity hp.
Cedars.....	St. Lawrence.....	206,400
Sault au Recollet.....	Rivière des Prairies.....	60,000
Beauharnois.....	St. Lawrence.....	2,145,000
Rapid VII.....	Upper Ottawa.....	64,000
Rapid II.....	Upper Ottawa.....	48,000
Bersimis No. 1.....	Bersimis.....	1,200,000
Bersimis No. 2.....	Bersimis.....	900,000
Carillon (initial operation; completed capacity will be 840,000 hp.)	Ottawa.....	240,000
TOTAL HYDRO CAPACITY.....		4,863,400
Gas turbine station.....	Les Boules.....	51,900

The Commission operates three systems. The Southwestern Quebec system is the most important. In addition to supplying all types of customers in the Metropolitan

* The Commission also purchases 135,000 hp. from the Shawinigan Water and Power Company.

Montreal area, it supplies power to customers in the Beauharnois-Valleyfield area, plus contracts for large deliveries to The Hydro-Electric Power Commission of Ontario, the Aluminum Company of America at Massena, N.Y., the Gatineau Power Company and the Shawinigan Water & Power Company. The Northeastern Quebec system is composed of three regional areas—Bersimis, Gaspé and Chibougamau. The Bersimis and Gaspé areas are interconnected with the Southwestern Quebec system. Chibougamau is isolated and is served by the Commission through a purchase power contract. Gaspé region is supplied by a transmission line linking Les Boules with system resources near Quebec. The Bersimis and Gaspé regions normally receive their power supply from Bersimis plants 1 and 2 which furnish large blocks of power to the Southwestern Quebec system for use in the Montreal area and to the Shawinigan Water & Power Company near Quebec City. These plants also supply the requirements of customers on the north shore of the lower St. Lawrence River.

14.—Growth of the Hydro-Quebec System, 1953-62

NOTE.—Figures for the years 1953-56 will be found in the 1950 Year Book, p. 572, and for the years 1947-52 in the 1957-58 edition, p. 579.

Year	Municipalities Served	Customers Served (end of year)	Power Distributed	
			Total	Primary
	No.	No.	hp.	hp.
1953.....	67	413,439	1,748,000	1,625,000
54.....	67	430,774	1,700,000	1,687,000
55.....	65	451,820	1,760,000	1,725,000
56.....	65	475,499	2,061,000	1,955,000
57.....	64	499,005	2,561,000	2,390,000
58 ^r	64	515,834	2,735,000	2,671,000
59 ^r	63	536,487	3,402,000	2,926,000
60 ^r	63	558,600	3,590,000	3,174,000
61 ^r	73	574,992	3,855,000	3,310,000
62.....	73	589,291	3,904,000	3,589,000

15.—Distribution of Hydro-Quebec Primary Power, by Customer Group, 1956-62

(Coincident with Montreal System peak)

System	1956	1957	1958	1959	1960	1961	1962
	hp.	hp.	hp.	hp.	hp.	hp.	hp.
Montreal.....	1,351,000	1,436,000	1,617,000	1,698,000	1,905,000	1,949,000	2,143,000
Beauharnois (local).....	138,000	265,000	253,000	255,000	208,000	201,000	244,000
Beauharnois (Ontario).....	250,000	250,000	267,000	261,000	261,000	250,000	250,000
Massena.....	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Shawinigan Water and Power Company.....	110,000	198,000	276,000	359,000	452,000	503,000	496,000
Gatineau.....	20,000	30,000	37,000	50,000	67,000	87,000	100,000
Gaspé.....	—	35,000	41,000	48,000	51,000	67,000	68,000
Southwestern.....	—	86,000	86,000	85,000	53,000	56,000	57,000
Chibougamau.....	—	15,000	19,000	25,000	25,000	27,000	29,000
Northeastern (north shore).....	—	—	—	70,000	77,000	95,000	127,000
Totals.....	1,944,000	2,390,000	2,671,000	2,926,000	3,174,000	3,310,000	3,589,000

Power plant construction completed or under way in Quebec during 1962 is outlined on p. 593.

Nationalization of Utilities.—In November 1962, the Quebec Government proposed to nationalize 11 private power companies. Nationalization became effective May 1, 1963.

Ontario.—The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed

for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and subsequently modified from time to time (RSO 1960, c. 300, as amended). The Commission may have from three to six members, all of whom are appointed by the Lieutenant-Governor in Council. Two commissioners may be members of the Executive Council of the Province of Ontario.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power supply facilities, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, the province has materially assisted the development of agriculture by contributing under the Hydro-Electric Distribution Act toward the capital cost of extending rural distribution facilities.

With the enactment of legislation effective Jan. 1, 1962, the Commission achieved the ultimate in what has been over a period of several decades a series of system amalgamations that has brought the entire provincial area served into a financial and administrative unit. Service is provided for the most part on a co-operative basis, and predominantly for the benefit of more than 350 municipalities supplied by the Commission with power at cost. Since there is no electrical connection between the Commission's facilities in northwestern Ontario and those serving customers in the remainder of the province, statistics are presented for two operating systems called the East System and the West System. The first includes the former Southern Ontario System and the former Northeastern Division, and the second coincides with the former Northwestern Division.

In addition to administering the enterprise over which it has direct control, the Commission, under the Power Commission Act and the Public Utilities Act, exercises certain regulatory functions, particularly with respect to the group of municipal electrical utilities which it serves. In order to provide convenient and expeditious service in this dual function of regulation and supply, the Commission subdivides its province-wide operations into eight regions with regional offices located in eight major municipalities.

The Commission is primarily concerned with the provision of electric power by generation or purchase, and its delivery to the electrical utilities for resale in the more than 350 municipalities having cost contracts with the Commission. The Commission supplies power in bulk, though not under cost contract, to approximately 200 direct customers, some located within the areas of the municipalities already referred to and some outside these areas. These direct customers include industrial customers whose requirements are so large or so unusual as to make service by the local municipal utilities impracticable. They also include mines, industries in unorganized territories, and certain interconnected systems, including a number of independent municipal utilities. These interconnected systems purchase power for resale either within or beyond the boundaries of the province.

In addition to these operations, which represent about 90 p.c. of its energy sales, the Commission delivers electric power to retail customers in rural areas and in a small group of about 30 municipalities served by Commission-owned local distribution facilities. A much larger part of retail service throughout the province is provided, however, by the municipal electrical utilities, who supply ultimate customers in most cities and towns, in many villages, and in certain populous township areas. The municipal electrical utilities are owned and operated by local commissions.

During 1962, the Commission's investment in fixed assets at cost increased by \$105,405,379 and at the end of the year amounted to \$2,567,014,636. Total assets after deducting accumulated depreciation were \$2,702,226,836 (exclusive of pension and insurance funds amounting to \$141,643,845).

In 1962 a total of 355 associated municipal electrical utilities engaged in the retail distribution of electricity purchased power from the Commission. The total assets of these utilities, after deducting accumulated depreciation, amounted to \$751,930,873, of which \$305,826,987 represented the equity acquired in the Commission's systems by the utilities operating under cost contracts.

The Commission's power development program as at Dec. 31, 1962 is given in Table 16 and is also outlined at pp. 593-594.

16.—Current Power Development Program of The Hydro-Electric Power Commission of Ontario, as at Dec. 31, 1962

System and Development	Units	In Service	Capacity ¹
	No.		kw.
East System—			
Lakeview—near Toronto.....	6	1961-67	1,800,000*
Douglas Point Nuclear Power—near Kincardine.....	1	1965	200,000*
Otter Rapids—Abitibi River.....	4	1961-63	172,000
Little Long—Mattagami River.....	2	1963	114,000
Harmon—Mattagami River.....	2	1965	110,000
Kipling—Mattagami River.....	2	1966	132,000
West System—			
Thunder Bay—Fort William.....	1	1963	100,000

¹ Capacities quoted are dependable at time of system peak except those marked with an asterisk (*), which are installed capacities.

17.—Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1960-62

Year and System	Generating Stations				Power Purchased	
	Hydro-Electric ¹		Thermal-Electric ¹			
	kw.	hp.	kw.	hp.	kw.	hp.
December 1960—						
East System.....	4,317,150	5,787,064	995,900	1,334,987	617,200	827,346
West System.....	593,900	796,113	—	—	2,000	2,681
Totals.....	4,911,050	6,583,177	995,900	1,334,987	619,200	830,027
December 1961—						
East System.....	4,146,150	5,557,841	1,373,600	1,841,287	617,500	827,748
West System.....	593,500	795,576	—	—	3,000	4,021
Totals.....	4,739,650	6,353,417	1,373,600	1,841,287	620,500	831,769
December 1962—						
East System.....	4,135,550	5,543,632	1,741,000	2,333,780	617,500	827,748
West System.....	593,500	795,576	—	—	—	—
Totals.....	4,729,050	6,339,208	1,741,000	2,333,780	617,500	827,748

¹ Dependable peak capacity—the amount of power which resources can be expected to supply at the time of system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the terms of the purchase contract.

18.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1957-62

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1957	1958	1959	1960	1961	1962
	kw.	kw.	kw.	kw.	kw.	kw.
East System.....	4,563,696	4,928,415	5,464,008	5,583,206	5,915,484	6,362,585
West System.....	406,880	489,121	554,196	574,328	548,448	606,300
Totals.....	4,970,576	5,417,536	6,018,204	6,157,534	6,463,932	6,968,885

19.—Growth of The Hydro-Electric Power Commission of Ontario, 1952-62

Year	Com- munities Served	Ultimate Customers Served Directly or Indirectly	Total Power Distributed ¹	Assets of Commission and Municipal Utilities
	No.	No.	kw.	\$
1952.....	1,244	1,315,862	3,330,286	1,442,511,467
1953.....	1,279	1,389,750	3,480,646	1,687,947,082
1954.....	1,301	1,467,034	3,778,744	1,883,311,970
1955.....	1,325	1,540,011	4,436,340	2,040,174,745
1956.....	1,340	1,612,049	4,909,104	2,293,492,487
1957.....	1,376	1,674,062	4,970,576	2,563,058,384
1958.....	1,387	1,757,405	5,417,536	2,756,758,142
1959.....	1,405	1,830,453	6,018,204	2,909,088,086
1960.....	1,414	1,881,472	6,157,534	3,044,800,819
1961.....	1,418	1,938,897	6,463,932	3,196,429,522
1962.....	1,434	1,991,288	6,968,885	3,148,330,722

¹ Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

Manitoba.—Manitoba Hydro is the primary developing, generating and distributing power agency in the Province of Manitoba. The corporation came into being Apr. 1, 1961, following the amalgamation of the two former provincial government electrical utilities engaged in the generation and distribution of electric power. It operates five hydro-electric generating stations, two thermal type plants and a limited number of diesel generating installations. The combined generating capability of the corporation is 829,200 kw. which will be increased by 330,000 kw. in 1965 following the completion of the Grand Rapids hydro-electric development on the Saskatchewan River.

Hydro installations account for 580,000 kw. of the total generating capability, thermal for 244,000 kw., and diesel for 5,200 kw. Of the hydro stations, four are located on the Winnipeg River and, like the thermal installations, produce power for the southern section of the province; the fifth hydro station, rated at 160,000 kw., is situated on the Nelson River 425 miles north of Winnipeg and supplies power for The International Nickel Company of Canada, Limited, development and the townsite at Thompson in northern Manitoba. Diesel installations are used to provide power in three northern areas.

In serving its 193,622 urban, rural, commercial and industrial customers, the corporation maintains some 33,931 miles of primary transmission and farm distribution lines. Approximately 95 p.c. of the total resident-occupied farms in the province are electrified, and 532 cities, towns and villages are provided with power service. While Manitoba Hydro supplies power for most of the province, including the cities and municipalities adjoining

the city of Winnipeg and comprising part of Metropolitan Winnipeg, it does not distribute power within the corporate limits of the city, although it does supply a portion of the city's basic power requirements.

Power plant construction in Manitoba in 1962 is outlined at p. 594.

Saskatchewan.—The Saskatchewan Power Corporation was established on Feb. 1, 1949, and operates under the provisions of the Power Corporation Act (SS 1950, c. 10, as amended). It succeeded the Saskatchewan Power Commission which had operated from Feb. 11, 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase and to transmit, distribute, sell and supply natural or manufactured gas.

In 1962, the Corporation served 957 urban communities (with six or more customers) in retail sales, and served the cities of Saskatoon and Swift Current, the town of Battleford and the hamlet of Waskesiu in bulk sales. Some bulk power was also sold to the City of Regina and to the Manitoba Hydro Electric Board on an exchange basis. Activities of the Corporation cover the entire province with the exception of the city of Regina, which owns and operates municipal plants and a distribution system.

At the end of 1962, the Corporation served 235,386 customers, 197,811 of whom were retail customers and 37,575 of whom were located in communities supplied with power through bulk sales. The retail customers included 133,903 urban customers and 63,908 classified as rural, predominantly farmers. During 1962, 1,645,862,278 kwh. were made available to customers, of which 1,624,482,258 kwh. were generated in Corporation plants and 21,380,020 kwh. were purchased in bulk, primarily from Manitoba. At the end of the year, the Corporation had invested, at cost, a total of \$375,428,535 in electric and natural gas plant in service (\$255,432,044 in electric only).

During 1962, the Corporation owned and operated six steam generating plants—one at Prince Albert, two each at Saskatoon and Estevan, and a sixth plant at Moose Jaw. These plants supplied 93 p.c. of total system requirements and two internal combustion gas dual fuel plants at Kindersley and Swift Current supplied most of the remainder; a third plant at Unity was retired early in 1962. System capability in operation at the end of 1962 was assessed at 540,150 kw. with 499,000 kw. in steam plants, and 41,150 kw. in gas dual fuel units and diesel plants. At the end of 1962, the Corporation owned and operated 69,453 miles of transmission and rural lines (excluding urban distribution and hi-lines).

Power plant construction in Saskatchewan in 1962 is outlined at p. 594.

20.—Growth of the Saskatchewan Power Corporation, 1953-62

Year	Communities Served in Bulk and Retail Sales	Individual Meters in Communities Served	Power Distributed	Revenue
	No.	No.	kwh.	\$
1953	631	122,676	398,211,673	10,363,752
1954	664	134,587	472,763,014	11,936,234
1955	742	149,134	556,776,981	13,350,177
1956	799	162,594	659,720,877	15,566,910
1957	870	178,567	780,613,534	18,152,460
1958	880	188,293	909,086,629	20,687,771
1959	962	197,451	1,067,349,615	23,909,113
1960	984	221,675	1,233,531,753	26,667,471
1961	901	229,336	1,498,055,955	30,263,598
1962	961 ¹	235,386	1,645,862,278	33,106,018

¹ November 1962 figure.

Alberta.—The generation and distribution of electric power in Alberta is handled by a combination of several municipally-owned urban systems and three investor-owned companies serving the greater part of the province. The regulatory authority over the investor-owned systems is the Public Utilities Board, which has jurisdiction over the distribution and sale of electricity. The Board, which controls franchises and rates, has power to hold investigation upon complaint either by a municipality or by a utility company, and following such investigation may fix just and reasonable rates. The Alberta Power Commission controls all phases of system development, including the provincial grid system.

Plant additions completed or under way in Alberta during 1962 are outlined at pp. 594-595.

British Columbia.—British Columbia Hydro and Power Authority was created on Mar. 30, 1962 under the provisions of the British Columbia Hydro and Power Authority Act which amalgamated British Columbia Electric Company Limited with British Columbia Power Commission. The new organization provides electric service for most of British Columbia.

**21.—Summary Statistics of the British Columbia Hydro and Power Authority,
Year Ended Mar. 31, 1963**

Item		Amount	Item		Amount
Customers (electric).....	No.	459,098	Annual revenue (electric).....	\$'000	92,457
Installed plant capacity.....	kw.	1,865,000			
Pole Miles of Line—			Capital Investment (plant in operation)—		
Transmission (high voltage).....	miles	3,211	Generation plant.....	\$	417,651,296
Distribution primaries.....	"	11,393	Transmission plant.....	\$	144,122,363
Power Requirements—			Distribution and general plants....	\$	283,943,027
Generated.....	'000 kwh.	6,568,000			
Purchased.....	"	229,000			
Total, Power Requirements.	'000 kwh.	6,797,000	Total, Capital Investment (plant in operation).....	\$	845,716,686

Of the Authority's total power requirements of 6,797,000,000 kwh. for the year ended Mar. 31, 1963, 6,209,000,000 kwh. or 91.3 p.c. was produced by hydro-electric plant, 359,000,000 kwh. or 5.3 p.c. was produced by thermal plant and the remainder, amounting to 229,000,000 kwh., was purchased.

Power plant construction in British Columbia in 1962 is outlined at p. 595.

Northwest Territories and Yukon Territory.—The Northern Canada Power Commission, formerly Northwest Territories Power Commission, was created by Act of Parliament in 1948 to bring electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include Yukon Territory. The Commission has authority to construct and operate power plants as required in the Territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse, Y.T., the Mayo River near Mayo Landing, Y.T., and the Snare River north-west of Yellowknife, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Smith, Fort Resolution, Frobisher Bay and Inuvik, N.W.T., and at Field, B.C.

The Whitehorse Rapids power development, which has been in service since November 1958, supplies the power for the Department of National Defence at Whitehorse, most of the power for the city of Whitehorse, and the power for heating systems of the Department of National Health and Welfare Hospital and two hostels operated by the Department of Citizenship and Immigration.

The Snare River hydro developments supply power to the mines in the Yellowknife area and, with the Bluefish hydro-electric plant of the Consolidated Mining and Smelting Company of Canada Limited, supply the town of Yellowknife. The original Snare Rapids plant has been in operation since September 1948 and the Snare Falls plant, situated on the same river about 10 miles downstream from the original plant and remotely controlled from Snare Rapids, was placed in service in November 1960.

The Mayo River plant has supplied power to mining properties in the Elsa and Keno areas and to the Mayo Landing and Keno City communities since 1952.

The diesel-electric plants supply the needs of Federal Government departments and the general public in the communities in which they are located. In addition to these plants the Commission operates a power and heating plant at the Fort McPherson residential school for the Department of Northern Affairs and National Resources, and the municipal water system and central heating plant supplying the hostel and school premises at Fort Simpson, N.W.T. Details of construction completed or under way in the Territories during 1962 are outlined at pp. 595-596.

CHAPTER XIII.—FISHERIES AND FURS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—FISHERIES

Section 1.—Commercial Fishing and Marketing*

Canadian fishermen reap the harvests of two mighty oceans—the Atlantic and the Pacific—and the most extensive system of inland rivers and lakes in the world. The annual catch of some 2,000,000,000 lb. of fish and shellfish has a marketed value of more than \$200,000,000. Canada is surpassed only by Norway and Japan as an exporter of fish products, retaining about one third of its catch and shipping the remainder abroad in fresh, frozen, canned, salted, dried or otherwise preserved form. There are over 79,000 commercial fishermen in Canada and many more thousands of people are employed in the fish processing industry.

Canadian fisheries were more prosperous in 1962 than at any previous time in their history. Records were achieved in every major sector; the effects of the expansion reached as far as the construction and boat-building industries, adding impetus to their activities. The Maritime Provinces reported the most productive period ever experienced. Fishermen there earned a record gross income of over \$43,000,000; the value of each of the two major catches, lobster and cod, increased by about \$1,000,000; scallops, until recently a minor fishery, moved up to third place; and a marginal enterprise, the harvesting of Irish moss from the sea, showed signs of sudden expansion to importance. Newfoundland established new levels in both the landed value of its catch (\$17,000,000) and the output of its rapidly growing frozen fish industry, and the volume of its traditional product, light-salted cod, showed an upturn for the first time since 1959. In Quebec both quantity and value of the seafood catch ran from 20 p.c. to 25 p.c. ahead of 1961 in almost every month of the year. British Columbia set a new mark for the number of salmon taken in one season; produced the largest pack of pink salmon ever canned in one year; received a higher value for its halibut catch than ever before; and made its first serious venture into the world-wide tuna fishery. The freshwater operations, which now contribute about 10 p.c. of the annual marketed value of all Canadian fish products, made more than proportionate advances.

* Prepared by the Information and Consumer Service, Department of Fisheries, Ottawa.

Atlantic Fisheries.—The major elements of prosperity in the Atlantic industry during 1962 were the very steady high level of market demand and the return of normal quantities of cod to the fishing banks after a two-year scarcity. Figures indicating world per capita consumption of fish showed an upward trend in 1962 and, of more immediate import, per capita consumption of frozen groundfish rose in the United States. Saltfish prospects also improved. The biggest buyers of salt cod are the British West Indies and the general level of trade with this area has risen in the past two or three years.

The Maritime Provinces.—Nowhere was there more optimism than in the Maritimes. At the end of 1962 four large steel draggers for the offshore fleet were being built to the most modern specifications and at least five more were on order. In the inshore fleet there was notable expansion in two new methods of groundfishing, Danish seining by the larger boats and gillnetting by the smaller ones. These two types of gear were tried out a few years ago, almost as a last resort, in an effort to revive the then languishing fishery on the Gulf side of Cape Breton Island. They both proved extremely successful. Plants in the area were adding extensions in 1962 and the gear was being proved on other fishing grounds.

Output of frozen fresh seafood in the Maritimes exceeded 87,000,000 lb., an increase of 12,000,000 lb. over the 1961 production. Even so, at the end of December stocks were only 1,000,000 lb. higher than at the end of 1961; the market had absorbed the remainder. Production gains were mainly in fillets, blocks of cod and blocks of flounders although output of raw breaded fish portions also expanded sharply.

Lobsters provide about one third of the fishermen's gross income in the Maritimes. In 1962 lobster landings were a little smaller than in the previous year but, with much higher prices, landed value increased by \$1,000,000 to a total of \$19,000,000. Even during the latter part of the year when the traps are usually brought ashore, fishing was so profitable that the gear was left in the water, the lobstermen feeling that their gains would be more than sufficient to cover normal storm losses. At the same time, the largest holding pool in the Maritimes began an expansion to double its capacity of 125,000 lb. of live lobsters.

Third largest money-maker for the fishermen in 1962 was the scallop catch. Landings increased again in that year and production of shucked meats reached a record 14,000,000 lb., having an estimated value of \$4,500,000. Over 90 p.c. was taken by the mobile offshore fleet, fishing almost exclusively on Georges Bank.

Herring were scarce everywhere until after midsummer and off Nova Scotia throughout the year. Heavy runs came briefly into the Gulf of St. Lawrence in the late summer and, later and for longer, into the Bay of Fundy in the fall. Fishing was pushed and, especially in New Brunswick, landings were heavy. The sardine canneries, pickling plants and smoke houses were all anxious for supplies and further large quantities were frozen for bait, which was in acute demand in Newfoundland because of failure of the squid fishery there. Mackerel were more plentiful than in 1961. Prince Edward Island had a surplus after filling its orders for the fresh market and, as it has no large pickling industry, salted the excess for bait.

The expansion of Irish moss facilities at three points in Nova Scotia, planned in 1962, is expected to add several million pounds to the province's output and a million dollars in job opportunities. The moss is gathered from the sea, dried and shipped to United States manufacturers of colloids.

Newfoundland.—Newfoundland fishermen increased their gross earnings by \$2,000,000 in 1962 when the industry established several new records: the annual output of frozen fish reached its highest point at 74,000,000 lb.; the landed value of the catch reached a record \$17,000,000; unit landed prices for cod, haddock and redfish were higher than they had ever been; and fishermen received more per quintal for their light salted cod than ever before. The year was characterized by a very strong market for the blocks of frozen cod which account for most of the output of the freezing plants and are sold mainly to United States manufacturers of fish sticks. Ten years ago in Newfoundland, the freezing industry took only 15 p.c. of the cod landings but the proportion has grown steadily and in 1962

reached nearly 40 p.c. This included the entire catch of the offshore fleet and as much of the inshore catch as a greatly expanded transport service could collect from the fishermen and bring to the plants.

Newfoundland's catch of cod from the banks returned to normal after two lean years, and heavy runs of cod arrived on the trap fishing grounds. However, there were also a few disappointments. After only a brief stay, cod left the trap grounds as suddenly as they had come, and Newfoundland's usual runs of squid failed to appear, so that bait for the autumn trawl fishery presented a problem.

In 1962, 32,000,000 lb. of cod blocks were frozen, 10,000,000 lb. of other groundfish blocks and 30,000,000 lb. of groundfish fillets, altogether an increase of 8,000,000 lb. over the previous record. At the end of the year, as a measure of market demand, stocks on hand were smaller than at the beginning. Mainly because of difficulties besetting fresh fish transport, 60 p.c. of the expanded cod catch remained for salting and total saltfish production rose by 16 p.c. With a successful Labrador floater fishery contributing, output of light salted fish increased for the first time in several years. Shipments of heavy salted fish to Nova Scotia drying plants were also considerably higher.

Expansion of the inshore fisheries was foreseen in a heavy schedule of small boat building. About 350 craft were completed during 1962 and 500 more planned for 1963.

Pacific Fisheries.—In 1958, the year of the great sockeye bonanza, British Columbia fishermen sold their salmon catch for a record \$37,000,000 and the canneries produced a pack of 1,900,000 cases. In 1962, which will go down in history as the "year of the pinks", the salmon fishermen received over \$30,000,000 for their catch, making it the second-best year, and the canneries put up 1,800,000 cases. The total number of salmon caught was 33,000,000, by far the greatest since the record was started in 1951. The catch weighed 164,000,000 lb., of which 93,000,000 lb. and 23,000,000 fish were pink salmon, the largest pink catch ever taken in one year in the province. The previous record of 22,000,000 pinks had stood since 1930. Even by working around the clock, plants could not cope with such landings and were obliged to put catch limits on their boats. The pink pack of 1,188,000 cases broke a record which had been unchallenged for 32 years.

The sockeye catch was small because of near failure of the Adams River run to the Fraser River. This was the run that provided the bonanza of 1958 and returned for the first time in 1962, as sockeye have a four-year life cycle. However, the Fraser River was low in 1960 when the yearlings moved down river and out to sea and few of them survived this migration. On the other hand, the coho catch was the second heaviest on record and as much of it is frozen rather than canned, it accounted for an increase of 3,500,000 lb. in the year's sales of frozen salmon. The catch of springs, low in 1961, failed to improve in 1962. Chum landings were high, partly because several runs came in with the pink when the fishing effort was at its height.

When the halibut season closed on Oct. 15, the men had landed more fish and received higher unit prices for them than ever before. The catch totalled 35,000,000 lb., exceeding the record of 33,700,000 lb. established in 1960. The Canadian and United States catches together added up to 75,300,000 lb., compared with the 44,000,000 lb. which was all the depleted stocks could produce when international management was initiated as a recovery measure in 1931. The halibut industry moved from third to second position of importance among British Columbia fisheries, and it was significant that most of the big keels laid during the year were for the halibut fleet.

A summer herring fishery yielded a record 41,000 tons and, although the main fleet was tied up by price negotiations for six weeks in the fall, the total catch of 223,000 tons about equalled that of the previous year. The market for herring meal strengthened during 1962 and herring oil prices, rather depressed for several years, showed signs of improvement late in the year.

Two converted salmon seiners fished tuna off California about five days sailing from Vancouver. They came back convinced that the new Canadian brine spray system provides the world's finest shipboard refrigeration, eager for more experience in detecting and catching tuna fish, and making plans for expanding operations in 1963.

In the shellfisheries the oyster industry expanded and shrimp landings rose but crab production was the lowest in ten years.

Inland Fisheries.—Ontario's output of frozen lake fish increased to 6,800,000 lb. from 5,700,000 lb. in 1961, with emphasis on whole smelts and perch filets. Markets were strong and warehouse stocks at the end of the year were 20 p.c. lower than at the beginning.

In the Prairie Provinces and the Northwest Territories, freezings increased from under 9,000,000 lb. to over 11,000,000 lb., with major increases in the output of pickerel filets and dressed whitefish; stocks declined by 1,000,000 lb. during the year.

Exports of lake fish increased in value by about \$700,000. Most of the shipments went to the United States but they did include small-volume amounts of eels for Europe, marking the beginning of a hoped-for revival in this trade, which flourished until the beginning of World War II.

Section 2.—Governments and the Fisheries

The British North America Act gave the Federal Government full legislative jurisdiction for the coastal and the inland fisheries of Canada and under this Act laws are made for the protection, conservation and development of the fisheries throughout the country. However, the provinces have, by agreement, assumed administrative responsibilities in varying degree. Consequently, though all the regulations governing fishing are made by the Federal Government, the work of administering the fisheries (enforcing the different laws and regulations, inspecting fish products, issuing licences, etc.) is done without duplication of staff either by federal or by provincial officers, according to arrangement.

Specifically, all tidal or sea fisheries except those of the Province of Quebec are administered by the federal Department of Fisheries, and the freshwater or non-tidal fisheries, with some exceptions, are administered by the provincial departments. Quebec takes responsibility for all its fisheries including those in salt waters. Ontario, Manitoba, Saskatchewan and Alberta administer their freshwater species. In British Columbia, provincial government control extends to the freshwater forms and the Federal Government is responsible for marine and anadromous species. In Prince Edward Island, Nova Scotia, New Brunswick, Newfoundland and the Yukon and Northwest Territories, the Federal Government maintains complete control; administration of the fisheries of the National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Northern Affairs and National Resources.

Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries:—

- (1) The Department of Fisheries proper with headquarters at Ottawa, Ont., and area offices under Area Directors at Vancouver, B.C., Winnipeg, Man., Halifax, N.S., and St. John's, Nfld.
- (2) The Fisheries Research Board of Canada with headquarters at Ottawa and eight stations across Canada.
- (3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of these agencies is given in this Subsection.

The Department of Fisheries.—The chief responsibilities of the Department of Fisheries throughout Canada are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the optimum utilization of the resource; and to develop a proper public understanding of the resource and the industry.

The larger part of the staff of the Department is stationed in the field and is composed mainly of protection and inspection officers. The protection officers, including those on the Department's 82 patrol and protection vessels, are concerned with the enforcement of the conservation regulations under the Fisheries Act and other Acts designed to ensure a continuing maximum yield of fish, and are also responsible for the inspection of fish products and processing plants under the Fish Inspection Act and relevant section of the Meat and Canned Foods Act.

A conservation program is carried out by the Conservation and Development Service of the Department. Protection officers enforce regulations pertaining to restricted areas close seasons, limitations in location and types of gear, and also inspect spawning streams and keep them clear of obstructions. Biologists investigate such problems as pollution and water supply, and engineers construct fishways to enable fish to bypass obstructions of all kinds. Hatcheries are maintained to restock waters where the fisheries are under federal administration.

For the past few years a bounty has been paid for the killing of the parasite-carrying harbour seals along the Atlantic and Pacific Coasts at a rate of \$10 for adult and \$5 for young seals. Total payments for the year ended Mar. 31, 1963 amounted to \$20,620.

Inspection of fish and fish products to ensure a high standard of quality is carried out by the Inspection Service, and fish inspection laboratories are maintained on the Atlantic and Pacific Coasts and in Toronto and Winnipeg. A staff of home economist operates test kitchens in Ottawa, Toronto, Vancouver, Montreal, Halifax, Edmonton and Winnipeg, and conducts demonstrations and lectures on methods of preparing and cooking fish and fish products.

Through the medium of printed material, films, radio, television and exhibitions, the Information and Consumer Service of the Department informs the public on the various aspects of the industry and the work of the fisheries services, with the object of developing a better understanding of the resource and those engaged in its exploitation. This Service works closely with the Conservation and Development Service in matters concerning the conservation of fisheries and with the Inspection Service toward encouraging increased consumption of Canadian fish products in the domestic, United States and other markets.

The Economics Service has two related fields of responsibility: (1) to provide the government and the commercial fishing industry with current information, including statistical data, under the general heading of trade intelligence, and (2) to carry out studies and investigations in the primary fisheries and in the processing and distribution of fish products. In the first field, the Service works in close co-operation with the Dominion Bureau of Statistics and the Foreign Trade Division of the Economics Branch of the Department of Trade and Commerce; in the second, there is similar collaboration with the Fisheries Research Board. In both, a necessary contribution is made to the formulation of policy for fisheries management, industrial development and market services.

In addition to these regular services, the Department assists the commercial fishing industry in several special ways. To promote efficient primary fishing operations and improve the marketing of fishery products, assistance is provided for the construction of dragnets and longliners and for bait-freezing and storage facilities on the Atlantic Coast. The Fishermen's Indemnity Plan affords low-cost protection from losses of boats and lobster traps through storms and other causes. The Plan, in operation since 1953, meets a long-standing need on the part of small-scale individual fishermen. Vessels valued from \$250 to \$10,000 may be insured with payment of a premium of 1 p.c. of the appraised

value per annum. Up to Dec. 31, 1962, a total of 6,468 vessels with an appraised value of approximately \$21,578,000 had been insured under the Plan. In response to considerable demand for a similar type of protection against unusual losses of fishing gear and equipment other than vessels, a first step was taken by the introduction of regulations giving a measure of compensation to the lobster fisherman suffering abnormal losses of lobster traps, provided that a small premium has been paid by the fisherman. The premium rate varies in accordance with conditions in the different fishing areas but has been kept low. The Department also provides financial assistance to educational institutions agreeing to carry out specialized educational work among fishermen.

International Fisheries Conservation.—Conservation of the resources of the high seas can be effected only through regulation, and for this purpose international treaties have had to be made. Canada's obligations under such treaties with the United States and other countries are administered by the Department of Fisheries.

Canada and the United States have led the world in joint fisheries conservation development. Major examples of this joint effort are the International Pacific Halibut Convention, concerned with the preservation of the halibut stocks of the north Pacific and the Bering Sea, and the International Pacific Salmon Fisheries Convention, concerned with the conservation and development of the sockeye and pink salmon of the Fraser River. Investigations carried out under the auspices of Commissions appointed under these conventions, subsequent regulation and limitation of catches, and the construction of salmon fishways appear to have been successful in arresting and reversing an earlier trend toward depletion of these fisheries. Another example of restoring a depleted marine resource by international agreement and action is that of the fur seals of the Pribilof Islands in the Bering Sea. Under a treaty signed in 1911, known as the (North Pacific) Sealing Convention, pelagic sealing was prohibited while the animals were migrating to and from the Pribilofs where most of them breed. This treaty had been signed by the United States, Canada, Russia and Japan, and was one of the earliest conventions on resources of the sea. In 1941 Japan abrogated the treaty and the following year Canada and the United States signed a Provisional Fur Seal Agreement under which Canada, in return for abstaining from pelagic sealing, received 20 p.c. of the annual catch, which was supervised by the United States. A conference to re-negotiate the original convention was begun in Washington in November 1955 and a new settlement was signed by the original four countries on Feb. 9, 1957.

In 1949 the Government of Canada became a signatory, along with nine other countries, to the International Northwest Atlantic Fisheries Convention which came into force in 1950. The Commission established under this Convention, with headquarters at Halifax, N.S., makes scientific investigations of the fishery resources of the northwest Atlantic. The Commission has no regulatory powers but can make recommendations to the respective governments regarding measures that may be necessary for maintaining the stocks of fish that support the international fisheries in the Convention area. Treaty signatories now are: Canada, Denmark, Iceland, the United States, Britain, France, Italy, Norway, Poland, Portugal, Spain, the Federal Republic of Germany and the Union of Soviet Socialist Republics.

A step toward international action in regulating the high seas fisheries of the northern Pacific Ocean was achieved in December 1951 when Canada, the United States and Japan conferred at Tokyo. The resulting Convention was ratified by the three contracting governments and instruments of ratification were deposited at Tokyo in June 1953. The treaty is known as the International Convention for the High Seas Fisheries of the North Pacific Ocean and aims at providing the maximum sustained yield of the fishery resources of the northern Pacific non-territorial waters with each of the parties assuming obligations to encourage conservation measures. The Commission established under this Convention is studying the northern Pacific fisheries and will determine the application of the treaty principles and promote and co-ordinate the necessary scientific studies.

The seventh, and latest, international fisheries agreement to which Canada is a signatory is the Great Lakes Fisheries Convention, which provides for joint action by Canada and the United States in Great Lakes fishery research and in a program for the control of the predator lamprey in these waters. This Convention came into force in October 1955.

Canada is a member of the International Whaling Commission and is obligated to collect biological data on whales caught by Canadian vessels. Whaling operations are conducted in some years off the coasts of Newfoundland and British Columbia.

The Fisheries Research Board of Canada.—The Fisheries Research Board is a research organization established by Act of Parliament for the purpose of conducting basic and applied research on Canada's living aquatic resources, their environment and their utilization. It is the only Canadian federal research agency in this broad field. The antecedents of the present Board go back to 1898 when a Board of Management of the Canadian Marine Biological Station, consisting of eight university professors and the Commissioner of Fisheries, was created in the Department of Marine and Fisheries. This early organization was formalized by Parliament in 1912 when by special Act it established the Biological Board of Canada. Later, in 1937, as the scope and the research responsibilities of the Board were increased the Act was revised and the Board renamed the Fisheries Research Board of Canada. The Act was revised again in 1952-53, further broadening its scope. Thus, the present Fisheries Research Board is a lineal descendant of one of the oldest scientific organizations in Canada and one of the oldest government-supported research organizations under the supervision of an independent scientific board in North America.

By its Act, the Board is placed under the control of the Minister of Fisheries. The Board proper consists of a permanent chairman, who is appointed by the Governor in Council and who is a member of the Public Service of Canada, and "not more than eighteen other members" holding honorary appointments from the Minister of Fisheries for five-year terms. The composition of the Board is further defined by the Act to require that "a majority of the members of the Board, not including the chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department [of Fisheries] and the fishing industry". The scientific members are drawn principally from universities and research foundations across Canada, to include specialists in disciplines related to the Board's work. The industry members are selected from among Canada's leading businessmen with an intimate knowledge of fishing and the fishing industry and the Department of Fisheries representative is usually a senior staff member in Ottawa. Board members have both advisory and executive functions. The advisory functions are delegated in the first instance to regional Advisory Committees who conduct on-the-spot regional reviews and report to the Board on the operations and scientific programs with a view to their improvement. The executive functions are delegated to an Executive Committee elected from Board members and approved by the Minister.

The operations of the Board are highly decentralized, there being only a small administrative, supervisory and publications staff in Ottawa. The Board carries out biological research through five centres across Canada, oceanographic research at two locations and technological research at five others. The Board employs approximately 800 persons, of whom about 200 are scientists.

Biology.—The biological program of the Board is designed to add to fundamental knowledge concerning Canada's vast living marine and freshwater resources. Included here are life history, population and behaviour studies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other well known economically important aquatic species of animals, such as salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies in fish and shellfish diseases, fish enemies including the ill effects of water pollution, and such basic studies as fish genetics, physiology and behaviour,

the latter with a view to improving fish cultural and farming methods and also to improving fish farm and hatchery stocks. Besides these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

The biological work on the Atlantic Coast is conducted out of research stations located at St. Andrews, N.B., and St. John's, Nfld.; work on Arctic fisheries and on sea mammals is directed from a laboratory situated in Montreal, Que.; freshwater work is carried out from a station in London, Ont.; and work on the Pacific Coast is directed from research laboratories situated at Nanaimo, B.C. The Board operates 15 research vessels for its biological studies. These vary from small inshore and lake craft to large seagoing ships specially built for this purpose. The Board also acts as Canada's research agent for three international fisheries commissions and two international sea-mammal commissions to which Canada is party.

Oceanography.—Oceanography includes the study of the marine (and freshwater) environment in which aquatic organisms live. This is under continuing study to further knowledge in primary and secondary productivity and the occurrence of ocean and freshwater life of importance to man. Encompassed here also are investigations into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structure of large ocean areas including the ocean bottom where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas are regularly observed and correlated. These studies, as well as special studies of interest to the Royal Canadian Navy, the Department of Transport and the international fishery commissions, are carried out by the Board's two oceanographic groups operating from Halifax, N.S., and Nanaimo, B.C., with strong ship support from the Navy and the Department of Transport.

Technology.—Technological studies in general are aimed at making the best possible use of Canada's fish catches. Investigations are conducted toward improving methods of preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish including parts now wasted. These include developments in refrigeration and the use of antibiotics as fish preservatives, of improved refrigerated rail cars for fish distribution, improvements in canning, smoking and salting of fish as well as the development of new products such as protein concentrates (fish flour) and new uses such as the development of wieners for the utilization of abundant species that are not now used for food. Fundamental studies of the structure and composition of fish proteins, fish oils, fish hormones, the energy expenditure of migrating salmon and the nutrition of marine bacteria are also under way. In recent years handling and processing techniques have been investigated for the purpose of increasing over-all production efficiency and improving the product.

Technological investigations on the Atlantic Coast are carried out at research laboratories situated at Halifax, N.S., and Grande Rivière, Que., and applied work for Newfoundland is carried out at a Technological Unit at St. John's. For inland areas there is a Technological Unit in London, Ont., and a Technological Research Laboratory in Vancouver, B.C., undertakes investigation of Pacific Coast problems.

The Fisheries Prices Support Board.—Under the Fisheries Prices Support Act passed in 1944, this Board was set up in July 1947 to recommend to the Government price-support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry, representative of the various fish-producing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of \$25,000,000 but only on recommendation of the federal Treasury Board and authorization of the Governor in Council.

The Board maintains a small staff for administrative activities. The work is closely integrated with that of the Department's Economics Service and, where possible, services required by the Board are carried out by Department personnel. The Board has carried out field surveys on market conditions and possibilities and on factors affecting the income of fishermen in the various producing areas. The financial position of fishermen is kept under continuous review and recommendations are made to the Government on the basis of the findings. Special investigations are made when serious problems arise in particular areas.

Subsection 2.—The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

Newfoundland.—The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with the improvement and development of fishing and production methods. It conducts experiments and demonstrations in longlining, Danish seining and otter trawling, in the construction of multi-purpose fishing craft, and in the exploration of potential fishing grounds.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers and also to fishermen for the construction and purchase of modern vessels capable of a greater variety of fishing operations and larger production. Fishermen receive further aid through bounty payments at the rate of \$160 per ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 1955. The Fishing and Coastal Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes the government to assist financially in maintaining and prolonging the life of the existing fleet. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of \$300 per ton for vessels measuring from 15 to less than 100 gross tons, and \$150 per ton for vessels of between 100 and 400 gross tons. An Inshore Fisheries Assistance Programme provides a maximum bounty of \$10 per foot on boats measuring from 24 to 35 feet and bounties are paid to fishermen on certain types of nylon and other synthetic fibre fishing nets and lines.

Other services include the operation of fisheries training schools in navigation and engineering; advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics; assistance to fishermen's unions; weather and ice reports; and search and rescue. The Fisheries Salt Act, 1957 implements more rigid control over the use of fisheries salt.

Sport Fisheries.—The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Natural Resources Branch of the provincial Department of Mines, Agriculture and Resources but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

* Prepared by the respective provincial departments responsible for fisheries administration.

Prince Edward Island.—The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity and is concerned mainly with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and branches of the federal Department of Fisheries, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at an interest rate of 4 p.c. From its reorganization in 1949 until the end of March 1962, the Board has lent approximately \$1,804,000 for the modernization of the inshore and offshore fleets. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act under which loans may be made for facilities handling agricultural, horticultural or fishery products.

Game fisheries are the responsibility of the Department of Industry and Natural Resources. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada at sites provided by the provincial Department. Unfortunately, many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

Nova Scotia.—Although the Federal Government has exclusive jurisdiction over the marine and inland fisheries of Nova Scotia and attends to all phases of administration related thereto, the Nova Scotia Government operates in several fields where provincial initiative is found to be necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the Fisheries Division of the Department of Trade and Industry. The Fishermen's Loan Board and the Industrial Loan Board are administered within this Department; the first makes loans to fishermen for the purchase of boats and engines, and the second makes loans for the construction or improvement of fish processing plants. A staff of fisheries engineers performs inspection and survey duties for the Loan Boards and provides technical assistance and advice to loan applicants and others in the fisheries and allied industries, notably the boatbuilding industry. A staff of instructors conducts training courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of nets and other gear. This program receives substantial assistance from the Vocational Training Branch of the federal Department of Labour. The on-course instruction is supplemented frequently by informal on-the-spot assistance to smaller groups who find themselves in need of technical help with particular problems. The Fisheries Division, with financial and/or technical assistance provided by the Industrial Development Service of the federal Department of Fisheries, also organizes and conducts demonstrations of fishing methods and gear of types untried in some or all of the several fishing areas of the province.

Sport Fisheries.—In recent years, Nova Scotia, through the Wildlife Division of its Department of Lands and Forests, has spent a considerable amount of money on the improvement of certain streams in the province with a view to aiding salmon migration. A system of salmon-rearing ponds has been established on the Medway River in Queens

County, capable of producing 500,000 smolts each year, as well as a system of trout-rearing ponds on the Moser River in Halifax County with an annual capacity of 1,000,000 fingerlings. A full-time fisheries biologist is employed by the Division.

New Brunswick.—Commercial fishing is one of the most important basic industries of New Brunswick, employing more than 6,500 fishermen with annual earnings of over \$9,000,000, as well as about 2,800 plant workers. The annual marketed value of fish products is about \$32,000,000.

The fisheries of New Brunswick, both tidal and inland, are under the jurisdiction of the federal Department of Fisheries and angling in Crown waters is under the jurisdiction of the provincial Department of Lands and Mines. To supplement the activities of the federal Department of Fisheries and to establish closer liaison between the fishing industry and various government departments and agencies, both federal and provincial, the New Brunswick Government created in 1946 a Fisheries Branch and a Fishermen's Loan Board within its Department of Industry and Development.

Since its inception, the Fishermen's Loan Board has disbursed more than \$7,500,000 for the construction of fishing vessels and the purchase of modern equipment and diesel motors for fishermen of the province. Loans of \$1,500 to \$2,500 are made available to inshore fishermen for the purchase of lobster boats and engines, and amounts of \$10,000 to \$60,000 to offshore fishermen for the building and equipping of modern longliners, Danish seiners and draggers. These amounts represent the net amount lent to fishermen, which is about 70 p.c. of the total cost of the vessels after deducting the required down-payment and the Federal Government subsidy of \$225 per gross ton. New Brunswick now has a fleet of 92 groundfish draggers and 25 longliners and Danish seiners.

New designs of fishing vessels are under continuing study by the technical staff of the Fisheries Branch in co-operation with the federal Department of Fisheries, naval architects, boatbuilders and fishermen. A certain pattern of standardization is followed to keep building and maintenance costs at the lowest level, because fishing in New Brunswick is generally a marginal operation. Multi-purpose types have been successfully introduced in the inshore fisheries of the Gulf of St. Lawrence area. Modified versions of the 65-foot groundfish dragger, equipped with more powerful diesel engines and bigger equipment have proven to be more efficient than the original type. A prototype 84-foot steel stern trawler of Norwegian design, with a reinforced hull permitting winter operation in ice, was launched at Bathurst in June 1962 and two larger units of Dutch design were built at Saint John. A second unit of the same design as the prototype was put in service later in the year and contracts were awarded for the construction of two 92-foot steel stern trawler/purse seiners, basically of the same design, which will operate as tuna seiners during the summer months on the first commercial tuna fishing operation in Eastern Canada. All these vessels are eligible for the 50-p.c. subsidy on trawlers granted by the Canadian Maritime Commission.

Exploratory projects aimed at improving fishing boats and gear are carried out by the Fisheries Branch with the financial and technical assistance of the federal Department of Fisheries. After a few years of experimental fishing and demonstrations with cod gillnets, Danish seines, mid-water trawls, mechanical clam diggers, etc., these new types of gear are being used by commercial fishermen along the New Brunswick coast. Practical training is made available by the Fisheries Branch to dragger operators and inshore fishermen during the winter season in various parts of the province. A permanent school of fisheries has been in operation at Caraquet since 1959 which conducts a three-year course (November to April). More than 30 young fishermen from 17 to 30 years of age attend each year.

Quebec.—The Quebec Government, through its Department of Industry and Commerce, gives much consideration to the administration of the commercial fisheries of the province. For the benefit of producers and fishermen, it operates a network of cold storage plants for the freezing and preservation of fish. The network comprises 60 plants, together having a daily freezing capacity of 500 tons and a storage capacity of 25,000,000 lb. of fish.

These plants also perform a valuable service to fishermen by providing them with frozen bait and ice. In addition, the Department owns and maintains 123 stations in small fishing ports where fish is kept under proper conditions while awaiting collecting trucks or boats, and also operates an artificial drying plant with a processing capacity of 3,000,000 lb. of fish annually. A staff of fish wardens, technicians and technologists administers fishery legislation and assists in the application of new techniques for the expansion of the industry. The central administration is located at Quebec City with an office at Gaspé for the administration of cold storage plants. Fish inspection is carried out by federal inspectors who are vested with additional powers by the provincial government with respect to local sales.

Educational work among the fishermen and producers is conducted by the Department to teach the latest methods of fish preparation and of obtaining high-quality products. The Fisheries Training School at Grande Rivière gives to fishermen of all ages the opportunity of taking free theoretical and practical courses in fishery, and the Superior School of Fisheries at Ste. Anne de la Pocatière conducts a four-year course for technologists. Encouragement is given to the co-operative associations of fishermen through the Social Economic Service of the latter institution. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. The fish trade is promoted through advertising campaigns in newspapers and magazines, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets as well as through exhibits at fairs.

The Department adheres to the federal-provincial agreement on the building of druggers and longliners and assumes the building costs on a capital refunding plan. At the end of 1962, the fishing fleet of Quebec consisted of 65 druggers, 10 longliners and 49 *Gaspésiennes* or small longliners, and four Danish seiners, representing an investment of over \$4,000,000. After deduction of the federal subsidy of \$165 per gross ton, the cost to the fishermen was approximately \$3,400,000.

Biological and hydrographical research in the Gulf of St. Lawrence is directed by the Marine Biology Station at Grande Rivière. The Department also operates a Limnological Laboratory at Quebec City for studying the biology of the freshwater fish of the St. Lawrence River and its tributaries. The Quebec Aquarium at Quebec City exhibits freshwater and saltwater fish in 30 large tanks.

Sport Fisheries.—The Department of Tourism, Game and Fish exercises jurisdiction over the inland waters; it employs 350 full-time wardens. Licences are required for sport fishing and hunting, the revenue from which is applied to the improvement of fishing and hunting conditions. Five hatcheries are maintained at strategic points throughout the province—St. Faustin, Lachine, Lac Lyster, Tadoussac and Gaspé. These establishments distribute speckled trout, Atlantic salmon and grey trout fry, maskinonge fingerlings and older fish.

The Department administers five parks and 13 reserves in all of which, except for Mount Orford Park, excellent fishing may be found. Gaspesian and Laurentide Parks are renowned for their trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Five salmon streams are open to anglers—the Romaine River, the St. Jean River, the Petite Cascapédia River, the Matane River and the Port Daniel River. A joint committee composed of departmental officials and the directors of the larger fish and game associations studies the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario.—The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests. The Branch operates under the authority of the federal Fisheries Act, the Special Fishery Regulations for the Province of Ontario, the Ontario Game and Fish Act and the Regulations connected therewith.

Commercial Fisheries.—The commercial fishing industry in Ontario provides employment for about 3,200 persons directly and for many more indirectly, and produces an annual yield of from 35,000,000 lb. to 45,000,000 lb. of fish. The landings of fish in 1962 amounted to over 62,000,000 lb. This figure exceeds by more than 2,000,000 lb. the previous record catch of 1956. Very heavy catches of smelt and of yellow perch accounted largely for the greater than average catch. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie which is the most productive of these lakes. The principal species of fish taken commercially are perch, smelt, whitefish, pickerel, lake trout, white bass, pike, herring, chub, sheepshead, carp, catfish and bullheads, sturgeon, eels, goldeyes, rock bass, sunfish and suckers. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60-foot tugs, and types of gear vary from the most common gillnets, pound-nets and trap-nets, seines and baited hooks to small hand-operated seines and dip-nets. Fishing methods and equipment have been modernized extensively during the past few years. Diesel-driven steel-hull tugs have replaced steam-driven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Trawling for smelt is being carried out experimentally in Lake Erie. This fishing technique is new in the Ontario fishery but has been proven very efficient in harvesting smelt on a year-round basis in this lake.

Most Ontario fishermen are organized into various local associations. Many of these associations are, in turn, represented by the Ontario Council of Commercial Fisheries which performs important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of interest also in the organization of the fishery in the province.

Sport Fisheries.—Angling in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some 68,490 sq. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as brook, rainbow, lake and brown trout, walleye, smallmouth and largemouth bass, pike and maskinonge. It is difficult to measure the total value of the sports fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of \$2,500,000. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 22 forestry districts of the province.

Provincial Hatcheries.—Ontario operates 17 hatcheries and rearing stations and excellent results have been produced in the culture and distribution of various species of game fish. The primary species reared in these operations include brook trout, rainbow trout, lake trout, smallmouth and largemouth bass, and maskinonge. Four of the finest trout-rearing stations on the Continent are located in this province—at Dorion near Port Arthur, Sault Ste. Marie, Hills Lake near Englehart, and Chatsworth.

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies concerning lake trout, smallmouth bass and brook trout are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies of fish parasites have been initiated.

A selective breeding experiment concerning the hybrid between lake trout and speckled trout is progressing favourably. The deep-swimming character of the lake trout and the character of maturity at early age of the speckled trout are those being selected for combination in the hybrid.

Co-operation by Ontario in the field of gear development is being extended through the Federal-Provincial Committee for Ontario Fisheries and in the field of sea lamprey control through the Great Lakes Fishery Commission.

Manitoba.—The Province of Manitoba possesses a very extensive and valuable freshwater fishing industry. Its fishing waters extend from the international boundary to the far northern reaches of the province and include approximately 39,000 sq. miles of lake and stream. In 1962 the commercial industry produced 30,651,500 lb. of fish valued at \$5,663,000 and provided full- or part-time employment for 5,018 fishermen and for at least 6,000 persons engaged in fish processing, transportation, boat-building and other related industries.

Some 1,600 commercial fishing boats are in operation throughout the province, varying in size from diesel lake freighters to small skiffs powered by outboard motors. The value of these boats together with nets and other equipment is estimated to be \$3,285,000. The largest single item is gillnets; 113,472, having an estimated value of \$1,826,000, were in use. New types of gear are continually being tested to determine their efficiency and cost under Manitoba's fishing conditions.

The freshwater fisheries of the province are administered by the Fisheries Branch of the Department of Mines and Natural Resources. Fishery regulations are enforced by the use of a fleet of modern patrol boats during the open-water season and a fleet of bombardiers and light trucks during the winter season, and remote operations are supervised by the use of departmental aircraft. All patrol units are equipped with two-way communication systems. In the management of the fisheries resources, fish culture plays an important role. Four main hatcheries are in operation, three of them to provide stock for commercial fishing waters. In addition, two seasonal spawn camps are operated to provide lake trout, whitefish and pickerel eggs which are subsequently reared and planted. Biological research and investigations include pollution studies, analysis of fishing success, spawning habits, sampling of catch to determine year, class, abundance and fish growth, tagging to chart migratory patterns and fish mortality, and the collecting of other data necessary for sound management of the fishery resources. To ensure quality fish products, the Fisheries Branch, in co-operation with the Department of Health, maintains a continuing program of inspection and plant improvement to meet the sanitation standards set out under the Public Health Act.

Sport Fisheries.—Angling is becoming increasingly popular in Manitoba both in summer and winter; in the 1961-62 season more than 100,000 licences were issued, 13,731 of them to non-residents. The Department has a program under which certain lakes are selected each year for fish eradication after which they are re-stocked with rainbow and speckled trout. In 1962 two new species were introduced to the province—Kokanee, a landlocked sockeye salmon, and the maskinonge, a prized species of sport fish. This program has diversified fishing in southern Manitoba where these species did not formerly occur. One of the province's four hatcheries is operated expressly for the production of sport fish.

Saskatchewan.—Almost 32,000 sq. miles of fresh water, about one eighth of Saskatchewan's surface area, provide the basis for the province's fishing industry. The administration of the fisheries, which includes the planning of policies and the development of programs to insure their proper management and utilization, is the responsibility of the Fisheries Branch of the Department of Natural Resources, with head office at Prince Albert. The Branch has three main divisions—Fish Management (Commercial and Sport Fisheries Sections), Fish Research and Fish Culture.

During the year ended Mar. 31, 1962, Saskatchewan became the highest Canadian producer of whitefish and lake trout; 7,596,806 lb. of whitefish were harvested and 2,161,846

lb. of lake trout. Approximately 1,500 commercial fishermen harvested a record of 14,515,030 lb. of fish (all species) with a market value of \$3,165,696. The value of this production to the primary producer was \$1,385,423. The 14 processing plants operating in the province produced 2,682,149 lb. of fillets. There has been noted improvement in handling and processing methods. A program for the development of improved harvesting techniques and production equipment is being undertaken to assist the commercial fisherman to increase his efficiency as a producer. Interest has been expressed by the fishermen in a boat-building program, which has been facilitated by the Fisheries Branch providing the blue prints and assisting in the construction of boats in a number of fishing areas.

During the 1961-62 fiscal year, 1,256 domestic fishing licences were issued and an estimated 1,256,000 lb. of fish harvested; 276 free Indian permits were issued and 73 fur farm fishing licences. Mink ranchers utilized 5,610,310 lb. of coarse fish (mainly burbot, suckers and cisco). Sport fishing continues to be the main outdoor recreational attraction in the province; in 1961-62, 96,623 angling licences were sold, 87,777 of them to residents.

During the past 15 years, biological and fisheries investigations have been carried out on major water bodies ranging from the Precambrian Shield to southern agricultural areas. Study projects are conducted by the Fish Research Division to: (1) determine productivity of water bodies; (2) secure information on relationship of fish species; (3) investigate ecology and assess factors which may affect environment of fish; (4) develop techniques to achieve maximum harvest of fish populations without prejudice to continued production. Among the 11 major projects carried out during 1962 was the examination of saline lakes reported to contain brine shrimp (*Artemia salina*); observations suggest that populations of brine shrimp exist in most of the major sodium sulphate lakes of Saskatchewan. Basic limnological and fisheries surveys were continued on lakes in the Precambrian area, along the highway from Lac la Ronge to the Churchill River and the Hanson Lake road and on provincial park lakes. The creel census project on Lac la Ronge was carried out for the twelfth consecutive year.

Lake trout, northern pike, pickerel (walleye), rainbow and eastern brook trout eggs were incubated and hatched at the Fish Culture Station located at Fort Qu'Appelle. In addition, 215,000 Kokanee fingerling were stocked in Madge Lake on an experimental basis and whitefish fry were stocked in four water bodies. In all, 71 lakes were stocked with 29,827,000 fry, 576,550 fingerling and 3,157 yearling and adults.

Alberta.—Commercial and game fishing is administered by the Fish and Wildlife Division of the Department of Lands and Forests under authority of the Fisheries Act (Canada) and the Fishery Act (Alberta).

Commercial production of fish from Alberta waters in 1962 amounted to 9,263,000 lb. which had a market value of \$1,416,000. This represented a considerable decrease from the production of the previous year, the result of a 50-p.c. reduction in the catch from Lesser Slave Lake which usually amounts to about one half the provincial total. Whitefish accounted for about one third of the catch and 60 p.c. of the market value; other fish taken in order of market value were pickerel (walleye), tullibee—a low-priced animal food fish—northern pike, lake trout, yellow perch, burbot, sucker and goldeye.

Fisheries research at the Alberta Biological Station at Gorge Creek during 1962 involved a study of the relationship between stocking rates and the mortality of hatchery trout stocked in streams. Biological studies and investigations included sampling of populations to determine growth and abundance, analysis of basic lake productivity, and comprehensive continuing studies of major commercial lakes. In connection with sport fisheries, eleven lakes and a number of streams in the North Saskatchewan, Athabasca and Churchill drainages were examined and coarse fish removed with the use of chemicals in seven lakes and three streams in preparation for trout stocking. Study of the recovery by anglers of hatchery-reared trout was continued on Carbondale River and Jumping Pound Creek and evaluation of trout-stocking practices in lakes was conducted by creel census at two locations in the province.

British Columbia.—A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and Conservation. Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking, the administrative and regulative jurisdiction over the fisheries of British Columbia rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters, is vested in the Fish and Game Branch which operates a number of trout hatcheries and egg-taking stations for restocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

Section 3.—Fishery Statistics

The review of commercial fishing and marketing given in Section 1, pp. 606-609, covers the situation in 1962 and contains estimated figures for that year. However, at the time of the preparation of this Chapter, the latest statistics available in detail for both the primary industry and the fish products industry were those for 1961 contained in the following Subsections.

Subsection 1.—Primary Production

Atlantic Coast fishermen had a better-than-average year in 1961. Although the quantity of all fish landed was down 10 p.c., higher unit prices for most species brought the value received by fishermen up to \$59,004,000 compared with \$59,763,000 in 1960. Lobster, the major money-maker for the third consecutive year, had a landed value of \$18,054,000, followed by cod at \$15,646,000, haddock \$4,647,000, flounder and sole \$3,311,000 and scallops \$3,082,000.

The Newfoundland catch amounted to 503,079,000 lb. valued at \$14,922,000, compared with the record 573,771,000 lb. valued at \$15,856,000 landed in 1960. Strong competition for supplies by freezing plants to meet an expanded export demand for frozen groundfish gave fishermen higher returns for their catch. The cod fishery, with landings of 328,052,000 lb. valued at \$9,028,000 in 1961, remains the top fishery for Newfoundland.

The 1961 Nova Scotia catch of 439,662,000 lb. valued at \$27,741,300 was up 2.5 p.c. over the 1960 quantity but down slightly from the 1956-60 average. Heavier landings of haddock, herring and scallops and higher unit prices for most species gave the fishermen of that province their highest recorded return. Lobster, cod, haddock and scallops, in that order, were the main species. The fact that the annual herring run chose to come up the

Nova Scotia side of the Bay of Fundy instead of the New Brunswick side was mainly responsible for a 37-p.c. drop in New Brunswick landings in 1961; they amounted to 144,464,000 lb. compared with 228,121,000 lb. in 1960 and their value was \$7,624,800 compared with \$9,206,100. Smaller landings of lobster and smelts also added to the decline. In Prince Edward Island declines were reported in landings of most species, the total quantity dropping from 42,283,000 lb. in 1960 to 36,664,000 lb. and the value from \$4,639,600 to \$4,489,100.

Quebec fishermen landed 109,174,000 lb. of fish in 1961 valued at \$4,710,000, an increase of 10 p.c. in quantity and 5 p.c. in value over 1960. Cod with a landed value of \$1,810,100 and lobster at \$1,086,500 remained the major species taken.

The British Columbia fishery was above normal in 1961, recording total landings of 635,550,000 lb. valued at \$38,778,000 compared with 335,040,000 lb. valued at \$27,961,000 in 1960; this was a 90-p.c. gain in quantity and a 39-p.c. gain in value. Increased landings of coho, pinks and sockeye brought the total salmon landings up to 121,634,000 lb. against 75,153,000 lb. for the previous year. The herring fishery, with good markets for meal, more than doubled its 1960 catch, landing 448,433,000 lb. valued at \$4,589,000. Halibut landings, on the other hand, were down 8 p.c. to 24,951,000 lb. but the value rose 21 p.c. from \$4,379,000 in 1960 to \$5,316,000. The groundfishery as a whole was down from the previous year because trawlers found it more profitable to transport salmon from the seiner to the cannery than to fish.

The 1961 inland fishery had landings of 123,073,000 lb. valued at \$12,450,000, little changed from 1960.

1.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1957-61

NOTE.—Figures for the years 1918-56 are given in the corresponding table of previous Year Books, beginning with the 1947 edition.

Province or Territory	1957	1958	1959	1960	1961
QUANTITY					
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	575,825	464,024	562,228	573,771	503,079
Prince Edward Island.....	39,635	39,078	42,025	42,283	36,664
Nova Scotia.....	438,687	468,462	423,273	430,310	439,662
New Brunswick.....	192,299	160,972	227,994	232,662	147,925
Quebec.....	140,845	123,868	112,954	98,851	109,174
Ontario.....	51,109	47,175	48,984	47,600	54,951
Manitoba.....	31,571	31,929	31,052	31,944	30,658
Saskatchewan.....	11,065	12,600	12,550	14,530	14,515
Alberta.....	10,415	11,482	12,664	15,852	11,317
British Columbia.....	490,187	650,589	613,597	335,040	635,550
Northwest Territories.....	6,584	5,894	5,747	5,543	5,676
Totals.....	1,988,222	2,016,073	2,093,068	1,828,386	1,989,171
Sea Fish.....	1,868,633	1,901,460	1,975,856	1,705,362	1,866,098
Inland Fish.....	119,589	114,613	117,212	123,024	123,073
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	13,672	11,312	14,529	15,856	14,922
Prince Edward Island.....	3,550	3,754	4,287	4,640	4,489
Nova Scotia.....	23,084	24,954	27,112	26,094	27,741
New Brunswick.....	7,014	7,499	8,763	9,358	7,730
Quebec.....	4,068	4,195	4,316	4,504	4,710
Ontario.....	7,047	7,271	4,866	4,983	5,745
Manitoba.....	3,279	3,540	3,757	3,867	3,174
Saskatchewan.....	939	1,091	1,190	1,367	1,385
Alberta.....	854	879	1,016	1,159	833
British Columbia.....	30,021	51,352	34,995	27,961	38,778
Northwest Territories.....	720	682	703	702	675
Totals.....	94,248	116,529	105,534	100,491	110,232
Sea Fish.....	80,777	102,505	93,431	87,725	97,782
Inland Fish.....	13,471	14,024	12,103	12,766	12,450

2.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish,
by Selected Species, 1960 and 1961

Area and Species	Quantity Landed ¹		Value Landed ²		Marketed Value of Products ²	
	1960	1961	1960	1961	1960	1961
	'000 lb.	'000 lb.	\$'000	\$'000	\$'000	\$'000
Atlantic Coast						
Groundfish	963,806	885,249	28,844	28,523	63,006	67,090
Catfish.....	3,508	3,787	104	113	309	368
Cod.....	604,621	516,861	16,538	15,646	34,821	36,652
Flounder and sole.....	121,434	107,265	3,780	3,311	8,638	7,298
Haddock.....	95,126	118,395	3,685	4,647	8,961	11,524
Hake.....	16,857	16,733	326	349	540	603
Halibut.....	6,618	6,143	1,712	1,668	2,479	2,137
Pollock.....	57,604	49,655	1,262	1,067	3,092	3,318
Redfish.....	46,859	56,216	1,172	1,458	2,689	3,653
Other.....	11,179	10,194	265	264	1,477	1,537
Pelagic and Estuarial	297,716	238,832	8,093	6,842	22,955	18,603
Alewives.....	7,673	7,712	144	150	460	259
Herring.....	246,329	193,369	3,682	2,756	6,901	4,970
Mackerel.....	13,138	14,118	724	694	1,218	1,376
Salmon.....	3,577	3,466	1,461	1,417	2,350	1,993
Sardines.....					9,026	5,661
Smelts.....	3,443	2,267	347	221	638	292
Swordfish.....	3,890	3,196	1,342	1,238	1,415	1,635
Other.....	19,666	14,704	393	366	947	2,417
Molluscs and Crustaceans	77,658	86,140	20,862	22,081	33,683	32,255
Clams—						
Quahogs.....	404	199	16	8	18	8
Soft-shelled.....	2,718	3,225	144	156	280	316
Lobsters.....	51,517	47,547	18,031	18,054	28,818	25,957
Oysters.....	3,510	4,083	403	455	418	540
Scallops.....	7,716	10,516	2,021	3,082	3,465	4,322
Other.....	11,793	20,570	247	326	684	1,112
Other.....	...	...	1,964	1,558	5,123	6,863
Totals, Atlantic Coast.....	...	...	59,763	59,004	124,767	124,811
Pacific Coast						
Groundfish	46,424	40,701	5,652	6,429	9,339	9,485
Cod.....	5,244	3,439	260	170	794	689
Halibut ⁴	27,161	24,951	4,379	5,316	6,830	7,427
Ling cod.....	4,516	4,518	402	424	593	569
Sablefish.....	1,044	668	170	118	254	147
Sole.....	7,637	6,080	407	356	795	552
Other.....	822	1,045	34	45	73	101
Pelagic and Estuarial	270,407	578,700	20,843	31,012	41,595	66,668
Herring.....	187,675	448,433	2,178	4,589	3,450	8,207
Salmon.....	75,163	121,634	18,401	26,152	35,963	57,814
Chum.....	20,313	14,602	3,103	1,917	5,736	4,193
Coho.....	12,846	22,508	4,386	6,669	7,437	12,321
Pink.....	16,915	49,525	2,014	6,696	5,667	17,136
Sockeye.....	15,470	26,595	5,453	8,860	11,439	18,621
Spring.....	9,364	8,890	3,380	3,064	4,988	4,423
Other.....	245	204	62	48	706	712
Tuna.....	468	10	66	2	1,940	935
Other.....	7,111	8,623	198	269	152	212
Molluscs and Crustaceans	16,976	14,554	1,286	1,111	2,677	2,335
Clams, butter, little neck, razor, etc.....	4,348	2,337	133	76	535	324
Crabs.....	5,068	4,602	515	470	1,200	1,144
Oysters.....	5,879	6,388	339	369	405	480
Shrimps and prawns.....	1,678	1,207	299	194	523	367
Other.....	3	20	--	2	9	20
Other.....	...	...	181	226	462	270
Totals, Pacific Coast.....	...	...	27,962	38,778	53,933	78,758

For footnotes, see end of table, p. 624.

**2.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish,
by Selected Species, 1960 and 1961—concluded**

Area and Species	Quantity Landed ¹		Value Landed ²		Marketed Value of Products ²	
	1960	1961	1960	1961	1960	1961
	'000 lb.	'000 lb.	\$'000	\$'000	\$'000	\$'000
Inland						
Freshwater Fish.....	105,228	105,743	12,031	11,854	18,471	18,669
Bass.....	3,304	3,413	298	308	335	347
Catfish.....	1,234	1,146	199	188	220	204
Herring, lake (cisco).....	2,226	1,854	82	67	92	76
Perch.....	13,814	19,723	1,413	2,005	1,624	2,305
Pickereel (blue).....	5	2	2	1	2	1
Pickereel (yellow).....	13,890	13,346	3,020	2,455	4,600	4,014
Pike.....	7,958	7,864	457	409	1,093	962
Saugers.....	4,741	3,300	1,048	566	1,614	987
Sturgeon.....	618	567	308	351	340	378
Trout.....	3,947	3,891	542	537	944	1,163
Tullibee.....	12,582	10,398	761	780	960	984
Whitefish.....	27,068	27,184	3,494	3,814	5,992	6,589
Other.....	13,941	13,055	407	373	655	679
Other.....	17,796	17,330	736	596	784	641
Totals, Inland.....	123,024	123,073	12,767	12,450	19,255	19,310
Grand Totals.....	---	---	100,492	110,232	198,005	222,879

¹ Excludes livers.² Includes value of livers and liver products.³ Included with "Herring".⁴ Excludes landings by Canadian fishermen in United States ports.

3.—Persons Employed in the Primary Fishing Industry, by Province, 1959-61

Province or Territory	Sea Fisheries			Inland Fisheries		
	1959	1960	1961	1959	1960	1961
	No.	No.	No.	No.	No.	No.
Newfoundland.....	18,430	18,291	18,756	—	—	—
Prince Edward Island.....	3,280	3,274	3,464	—	—	—
Nova Scotia.....	13,012	12,780	12,578	—	—	—
New Brunswick.....	6,211	6,012	6,083	171	163	145
Quebec.....	5,387	4,989	3,771	1,037	1,015	1,173
Ontario.....	—	—	—	3,527	3,409	3,059
Manitoba.....	—	—	—	5,330	5,289	5,018
Saskatchewan.....	—	—	—	1,650	1,700	1,750
Alberta.....	—	—	—	6,089	5,730	5,422
British Columbia.....	15,456	15,159	16,805	—	—	—
Northwest Territories.....	—	—	—	503	360	336
Totals.....	61,756	60,505	61,457	18,307	17,666	16,903

Subsection 2.—The Fish Products Industry

The Census of Industry survey of the fish products industry covers establishments engaged in the processing of fish at the secondary industrial level. Some fishermen process the fish they land to a certain degree but their operations are not included nor are the minor amounts of processing done in the inland areas (Ontario, the Prairie Provinces, and the Northwest Territories). In 1961, products of fish processing establishments had a selling value of \$169,825,300, slightly higher than in 1960. The East Coast fish plants contributed \$96,838,200 compared with \$101,319,900 in the previous year and those of British Columbia \$72,987,100 compared with \$67,564,000.

4.—Summary Statistics of the Fish Products Industry, 1957-61

NOTE.—Based on revised Standard Industrial Classification and New Establishment Concept. Figures for 1957-60 have been revised since publication of the 1962 Year Book in order to maintain comparability.

Item		1957	1958	1959	1960	1961
Establishments	No.	410	426	400	387	340
Newfoundland.....	"	36	36	37	38	31
Prince Edward Island.....	"	22	21	19	16	18
Nova Scotia.....	"	120	134	138	131	122
New Brunswick.....	"	122	126	83	89	67
Quebec.....	"	66	65	69	69	56
British Columbia.....	"	44	44	44	44	46
Employees	No.	13,067	13,234	12,933	13,399	13,542
Salaries and wages.....	\$'000	27,419	28,243	27,732	29,829	30,433
Fuel and electricity.....	"	2,930	2,869	2,941	2,701	2,951
Cost of materials used.....	"	89,740	114,853	95,380	94,607	110,693
Value added by manufacture.....	"	1	56,861	47,853	48,679	59,475
Value of shipments.....	"	137,291	169,005	147,694	155,362	169,826

¹ Not available because of lack of inventory data.

The most important products of the fish products industry are canned salmon in British Columbia and frozen groundfish fillets on the Atlantic Coast. With the Pacific salmon catch back to normal in 1961, production of canned salmon at 1,405,159 cases was more than double the 1960 figure of 631,150 cases; value increased by 103 p.c. to \$46,151,000.

5.—Pacific Coast Production of Canned Salmon, 1957-61

Species	1957	1958	1959	1960	1961
QUANTITY (cases 48 lb.)					
Chum.....	239,641	230,636	133,129	86,819	95,385
Coho.....	193,058	131,527	213,105	91,505	241,379
Pink.....	751,609	451,802	458,596	219,563	661,291
Sockeye.....	228,452	1,074,304	256,171	226,844	398,204
Spring.....	10,480	10,704	15,230	5,915	7,921
Steelhead.....	1,318	1,205	1,256	504	979
Totals	1,424,558	1,900,178	1,077,487	631,150	1,405,159
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Chum.....	4,490	3,792	2,662	1,787	2,050
Coho.....	5,497	3,997	7,919	3,908	8,634
Pink.....	15,763	9,437	11,372	5,487	16,767
Sockeye.....	9,265	41,240	12,103	11,407	18,468
Spring.....	242	252	360	163	202
Steelhead.....	38	31	45	15	30
Totals	35,295	58,749	34,461	22,767	46,151

Increased demand for Atlantic Coast frozen groundfish fillets and blocks resulted in a 12-p.c. increase in production over 1960. The quantity produced amounted to 153,961,000 lb. in 1961 compared with 137,500,000 lb. in 1960 and the value increased 14 p.c. to \$35,224,000. Other important items included lobster products, dried salted fish, pickled fish and canned sardines.

6.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1957-61

Area and Species	1957	1958	1959	1960	1961
QUANTITY					
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Maritimes	65,834	69,639	71,714	67,600	75,940
Cod.....	23,995	26,085	28,674	24,449	25,989
Haddock.....	18,567	16,593	19,868	16,048	19,885
Redfish.....	7,070	8,147	4,957	6,214	6,423
Flatfish.....	12,515	11,845	11,206	15,623	13,355
Other.....	3,087	6,369	7,009	5,266	10,288
Quebec	10,243	10,784	11,791	12,483	14,012
Cod.....	8,645	8,779	9,145	9,458	10,415
Other.....	1,598	2,005	2,646	3,025	3,597
Newfoundland	52,129	53,975	58,581	57,447	64,009
Cod.....	30,275	32,129	39,688	36,497	38,309
Haddock.....	12,304	8,377	7,971	6,735	11,129
Redfish.....	4,529	7,273	4,087	5,137	6,976
Flatfish.....	4,874	5,864	6,366	8,589	6,992
Other.....	147	332	469	489	603
Totals, Atlantic Coast	128,206	134,398	142,086	137,530	153,961
Cod.....	62,915	67,593	77,507	70,404	74,713
Haddock.....	30,917	24,987	28,076	22,913	31,119
Redfish.....	13,198	16,867	10,814	12,887	15,327
Flatfish.....	17,932	18,182	18,197	25,523	21,750
Other.....	3,244	6,769	7,492	5,803	11,052
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Maritimes	15,056	17,940	17,678	16,019	17,870
Cod.....	4,605	5,815	6,052	4,841	5,522
Haddock.....	4,727	5,116	5,773	4,318	5,468
Redfish.....	1,661	1,894	1,118	1,374	1,400
Flatfish.....	3,256	3,731	3,384	4,665	3,778
Other.....	807	1,384	1,351	821	1,702
Quebec	1,667	2,001	2,294	2,320	2,909
Cod.....	1,350	1,586	1,747	1,652	2,102
Other.....	317	415	547	668	807
Newfoundland	10,052	11,508	12,863	12,542	14,445
Cod.....	5,471	6,393	7,885	7,126	7,967
Haddock.....	2,416	1,986	1,972	1,570	2,619
Redfish.....	853	1,466	858	1,012	1,592
Flatfish.....	1,276	1,583	2,037	2,728	2,131
Other.....	36	80	111	106	136
Totals, Atlantic Coast	26,775	31,449	32,835	30,891	35,224
Cod.....	11,426	13,794	15,684	13,619	15,591
Haddock.....	7,151	7,107	7,818	5,918	8,112
Redfish.....	2,669	3,622	2,266	2,639	3,367
Flatfish.....	4,685	5,452	5,602	7,758	6,274
Other.....	844	1,474	1,465	947	1,880

The value of all sea and inland fishery products processed or handled by processors, handlers and fishermen during 1961 amounted to \$222,879,000, which was 4 p.c. below the record year of 1958 when \$231,540,000 was realized but 13 p.c. above the 1960 figure of \$198,005,000. The value of Atlantic Coast seafood products was down slightly from that of the previous year but the value of British Columbia fishery products was 46 p.c. higher.

7.—Value of All Products of the Fisheries, by Province, 1957-61

NOTE.—Figures for the years 1917-56 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are given in the 1956 edition, p. 597.

Province or Territory	1957	1958	1959	1960	1961
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	26,750	25,746	31,675	33,783	33,119
Prince Edward Island.....	4,410	5,449	5,961	7,261	6,093
Nova Scotia.....	45,779	50,812	50,480	51,753	55,593
New Brunswick.....	22,293	24,623	28,367	33,130	26,386
Quebec.....	7,580	7,827	7,856	7,622	8,131
Ontario.....	7,928	8,180	5,475	5,606	6,464
Manitoba.....	5,929	6,844	6,689	7,035	6,214
Saskatchewan.....	2,010	2,339	2,596	2,830	3,166
Alberta.....	1,451	1,450	1,684	2,021	1,701
British Columbia.....	63,650	97,016	67,067	53,983	78,758
Northwest Territories.....	1,298	1,235	1,146	1,075	1,179
Totals¹.....	188,018	231,540	203,040	198,005	222,879
Sea Fish.....	168,769	210,931	184,879	178,750	203,568
Inland Fish.....	19,249	20,609	18,161	19,255	19,311

¹ Totals differ from the sum of provincial totals because salted groundfish (except boneless) are based on sales rather than production; duplications for bloaters are also removed.

PART II.—FURS

Section 1.—The Fur Industry*

Fur Trapping.—Without furs the history of Canada might well have been very different. It was with tales of a country teeming with fur bearers that Groseilliers and Radisson interested Charles II in 1665, leading directly to the formation of the Hudson's Bay Company, and it was with furs that the early French colonists in their settlements along the St. Lawrence River purchased their necessities from France. The early settlers soon found that although their new homeland contained boundless resources, markets were lacking for the produce of farm and woodlot, and in most cases fur trapping was the sole activity that could be counted upon to produce immediate revenue. The furs from the New World met with a ready market in Europe and, from the advent of settlement right up to the commencement of the nineteenth century, trapping remained the most important industry in Canada.

Although the relative importance of the fur industry in the Canadian economy has declined through the years, fur trapping continues to contribute substantially to the national income. Despite almost unbroken trapping activity over a period of many years, the production of wild fur bearers has been well maintained and, even in the settled areas, some varieties are still taken in large numbers. However, in most cases the wildlife has retreated before the advance of settlement so that the principal trapping areas now lie in the northern portions of the provinces and in the Northwest Territories.

Conservation measures, including the establishment of natural preserves and the protection of scarce types by limiting the catch or closing the season completely for a time, have been of material assistance in maintaining the numbers of wild fur bearers. Also, in many fur-producing areas, provincial and territorial authorities have instituted a registration system in accordance with which trapping areas are assigned to individuals on a constant basis. This system puts the responsibility on the trapper for the conservation of fur bearers in his own area, and encourages him to trap less intensively any species that show signs of becoming scarce. Prior to the allotment of individual areas, each trapper

* Prepared by A. Stewart, Production and Marketing Branch, Department of Agriculture, Ottawa.

tended to take every skin possible, with the knowledge that if he attempted to practise conservation someone else would probably come along and trap the area out completely.

In recent years, realizations for most types of wild furs have not kept pace with rising commodity prices. As a result, returns from the trapping enterprise have not been sufficiently attractive to keep trappers on their traplines on a full-time basis. Some have abandoned trapping completely, while in areas where other forms of employment are available many trappers have become full-time or part-time wage-earners, carrying on their trapping activities on week-ends or off days. This situation applies generally throughout the central and southern portion of the country, and one of the undesirable results of this part-time approach has been the failure to cover the trapping grounds adequately. Many of the less accessible areas tend to be neglected, with consequent wastage of the fur resource. However, in the northern regions trapping still plays an important part in the lives of the native Indians and Eskimos, providing an independent means of livelihood in these remote areas.

Mink Farming.—Mink farming originated in Canada in the early 1900's and has since grown to be the most important branch of fur farming. The industry apparently had its beginnings in Eastern Canada around 1910 but, being completely overshadowed at that time by the thriving silver fox business, very little in the way of records is available for the early years. Originally most ranched mink were raised on farms where the main business was the production of silver foxes and, since ranched mink pelt realizations were far from attractive at that time, it must be assumed that the raising of this species was adopted as a precaution against the recurring threat of an over-production of fox pelts. The following figures indicate the growth of the industry since 1935:—

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	\$		No.	\$
1935.....	30,558	10.58	1955.....	786,760	20.07
1940.....	229,202	9.64	1960.....	1,204,077	14.03
1945.....	255,968	21.51	1961.....	1,269,050	14.50
1950.....	589,352	17.08			

Through the years, large numbers of live mink were exported from this country to stock farms in many parts of the world. The results of this expansion in other countries were soon apparent in the increasing quantities of mink pelts marketed each year and, as early as 1939, concern was expressed by the trade concerning the ability of the market to absorb these quantities. Perhaps fortunately for the future of the industry, the rising production coincided with the appearance on the market of the first colour mutation. Initially, all ranch mink were brown or dark brown in colour, produced through crosses of various strains of wild mink. However, around 1936 the first mutation occurred—the Silverblu or Platinum, produced from conventional dark brown parents. This mutation was quickly followed by others and breeders soon learned to produce new exciting colours, so that today there exist more than 200 types, including variations of basic shades.

The appearance on the market of this wide range of natural coloured mink supplied an enormous fillip to the industry. In addition to the popularity gained through the many natural advantages of mink, the merits of owning a mink piece have been most effectively advanced through vigorous promotional campaigns. As a result, mink has achieved a popularity far surpassing that of any other fur or, indeed, of all the remainder of the world's furs combined. It is estimated that, in 1962, of a total world trade in raw furs amounting to \$350,000,000, mink accounted for \$240,000,000 and Persian lamb for \$65,000,000.

Canada Mink Breeders' Association, the national association of Canadian mink producers, was formed in 1952 through the amalgamation of several bodies. This Association is responsible for the promotion of Canadian mink in both the domestic and overseas markets and also works closely with fur auction outlets in formulating plans for marketing the annual pelt crop. In addition, the Association assists financially the undertaking by

universities and colleges of extensive research on diseases of mink, studies of mink nutrition, genetics and general ranching practices. Funds for these undertakings are obtained by a deduction at the auction level (currently 1.5 p.c. of the sales price) made from all members' pelts sold. The better quality portion of Canada Mink Breeders' pelt crop is marketed under the name Canada Majestic, followed by the generic name of the mink type; thus, Canada Majestic Sapphire or Canada Majestic Pastel. The Canada Department of Agriculture works closely with the Association in many phases of the mink farming industry, including the dissemination of information concerning results of research on mink diseases and nutrition, undertaken at the Experimental Fur Farm, Summerside, P.E.I.

The quantities offered and average prices realized in auctions sponsored by Canada Mink Breeders' Association during the 1961-62 season were as follows:—

<u>Type</u>	<u>Quantity</u>	<u>Average Price</u>	<u>Type</u>	<u>Quantity</u>	<u>Average Price</u>
	<u>No.</u>	<u>\$</u>		<u>No.</u>	<u>\$</u>
Dark.....	181,969	17.15	Violet.....	4,290	24.65
White.....	54,537	13.26	Lavender.....	3,858	22.74
Pastel.....	346,270	14.80	Taupe.....	3,991	15.43
Gunmetal.....	54,834	17.02	Hope.....	2,384	23.36
Pearl.....	56,873	21.17	Sapphire.....	147,870	18.34
Palomino.....	17,711	15.36	Miscellaneous mutations.	16,747	14.20
Silverblu.....	25,668	15.45			
Topaz.....	1,753	14.83	ALL MINK PELTS.....	918,755	16.26

Fox Farming.—In 1961 there were 1,815 fox pelts produced on Canadian farms, the average realization being estimated at \$10. No improvement in the demand for ranchered fox pelts has been evidenced recently, and although the fur trimmings industry is currently using large numbers of fox pelts for dyeing and trimming purposes, there has been no indication of a revival of interest in the use of fox furs for capes or garments. Prices now being realized for ranch-raised fox pelts do not cover the cost of production and those breeders who remain in the industry doubtless do so with the hope that some day a reversal of fashion will once more bring their product into demand.

Chinchilla Farming.—The production of chinchilla pelts in Canada in 1961 totalled 10,559, an increase of some 16 p.c. over the 1960 output. In addition to the animals pelted, substantial numbers of live animals for breeding purposes were exported to various European countries where chinchilla raising is becoming increasingly popular. Currently, the bulk of the Canadian chinchilla pelt crop is "lotted" together with the United States production and sold in New York, the larger quantities resulting from this combination making it possible to produce attractive, well-matched bundles.

This luxury fur has met with an excellent market recently and an outstanding feature has been the demand from Europe, especially Italy, for finest quality chinchilla pelts. In the earlier stages of the industry, efforts of the many beginners were hampered by the low quality of much of the breeding stock that was available. However, the emphasis placed by marketing outlets on quality, together with the obvious benefits accruing to a producer marketing better grade pelts, has encouraged breeders to concentrate on herd improvement and a noticeable upgrading of much of the breeding stock has taken place.

Nutria, the only other fur bearing animal reported on Canadian farms, is raised in limited numbers.

Fur Marketing.—Up to the end of World War I, most of Canada's fur production was marketed in London, England, and in New York. In 1920, the first Canadian fur auction was held in Montreal, and shortly afterwards fur auction houses were established in Winnipeg, Edmonton and Vancouver. Today, the bulk of Canadian furs is sold through eight fur auction houses located in Montreal, North Bay, Winnipeg, Regina, Edmonton and Vancouver. At the auction sales, furs are purchased through competitive bidding by buyers who may be purchasing for their own accounts or who may represent major

firms in any part of the world; Canadian pelts are traditionally sold in the raw or unprocessed state, facilitating entry into the many countries which maintain tariffs on imports of processed furs. The fur industry contributes about \$25,000,000 annually to Canada's export trade, approximately two thirds of the annual production going outside the country.

Most Canadian ranched mink pelts are shipped directly from farm to auction house where they are sold for the account of the producer, the fur auction house charging a commission for its services based on a percentage of the selling price. A small percentage of the total catch of wild furs goes direct from the trapper to the auction house. However, because most trappers require an outlet close at hand where they can dispose of their pelts immediately in exchange for needed supplies, the bulk of Canadian wild furs passes initially from the trapper to the local dealer who is often the operator of a small country store. Here, furs from many trappers are assembled and may then be shipped to the fur auction house or may await the arrival of a travelling buyer who will add them to his larger collection before shipping.

The selling season commences in December with large offerings of fresh ranched mink pelts, and later in the same month initial quantities of the new season's wild furs become available. Trapping in the northern regions gets under way around the same time as the pelting of ranch-raised mink, but because of the slower process involved in passing from trapper to country dealer to fur auction house, major quantities of wild furs are not generally available until January. In this and succeeding months, offerings of ranched mink continue, along with quantities of the world-famed Canadian wild mink, beaver and many other varieties.

Canada's production of ranched mink pelts currently constitutes approximately one twelfth of the total value of world production of ranched mink, while the value of the wild furs produced in this country amounts to approximately one quarter of the total value of the world's production of furs in this category. The Canadian production is therefore of major importance in the world's fur industry and in recent years it has been gratifying to note that, in addition to the competition provided by Canadian and United States buyers, fur auction offerings in this country have also benefited through participation of a substantial attendance of European buyers. During the 1961-62 selling season, these people set the pace at many Canadian auction sales and their determination to take home with them the top quality merchandise contributed materially to the success of these events.

Section 2.—Provincial and Territorial Fur Resource Management

Most of the fur resources of the provinces of Canada are under the administration of the respective provincial governments. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, and the fur resources of the Yukon and Northwest Territories, all of which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Northern Affairs and National Resources is responsible for all Federal Government interests in wildlife resources except for those related to Indian affairs. The Canadian Wildlife Service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems. The functions of the Canadian Wildlife Service together with provincial information on wildlife resources and conservation measures are covered in Chapter I of this volume at pp. 44-52.

Section 3.—Fur Statistics

Subsection 1.—Fur Production and Trade*

Total Fur Production.—Early records of raw fur production were confined to the decennial censuses when account was taken of the number and value of pelts obtained by

* Prepared by the Agriculture Division, Dominion Bureau of Statistics.

trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of raw fur production. For a number of years the statistics were based on information supplied by the licensed fur trappers. More recently, annual statements based on royalties, export tax, etc., have been made available by the provincial game departments (except Prince Edward Island), and these statements are used in the preparation of the statistics issued annually by the Bureau. Figures for Prince Edward Island are based on returns supplied to the Dominion Bureau of Statistics by fur dealers in that province.

1.—Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1943-62

Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms ¹	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms ¹
	Number	Value			Number	Value	
		\$				\$	
1943.....	7,418,971	28,505,033	24	1953.....	7,568,865	23,349,680	43
1944.....	6,324,240	33,147,392	28	1954.....	6,274,727	19,287,522	49
1945.....	6,994,686	31,001,456	31	1955.....	9,670,796	30,509,515	43
1946.....	7,593,416	43,870,541	30	1956.....	7,727,264	28,051,746	56
1947.....	7,486,914	26,349,997	37	1957.....	6,919,724	25,592,130	57
1948.....	7,952,146	32,232,992	37	1958.....	6,440,319	26,335,109	60
1949.....	9,902,790	22,899,882	33	1959.....	5,370,531	25,800,555	62
1950.....	7,377,491	23,184,033	34	1960.....	5,999,414	31,186,078	60
1951.....	7,479,272	31,134,400	36	1961.....	6,237,360	28,737,087	59
1952 ²	7,931,742	24,215,061	42	1962.....	5,759,819	28,938,360	64

¹ Approximate.

² Wildlife pelts for Newfoundland included from 1952.

Ontario continued to lead the provinces in value of fur production, accounting for 28 p.c. of the total in the 1961-62 season. British Columbia followed with 17 p.c., Manitoba with 15 p.c., Alberta 14 p.c., Quebec 9 p.c., Saskatchewan 8 p.c., the Atlantic Provinces 6 p.c., and the Yukon and Northwest Territories combined 3 p.c.

2.—Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1961 and 1962

Province or Territory	1961			1962		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	\$		No.	\$	
Newfoundland.....	52,870	472,510	1.6	50,178	531,671	1.8
Prince Edward Island.....	4,561	62,807	0.2	4,299	66,966	0.2
Nova Scotia.....	86,154	706,820	2.5	83,832	882,243	3.0
New Brunswick.....	40,688	213,343	0.7	57,150	228,853	0.8
Quebec.....	443,482	2,791,889	9.7	356,899	2,599,850	9.0
Ontario.....	1,033,932	7,508,789	26.1	1,021,220	8,194,077	28.3
Manitoba.....	843,381	4,679,199	16.3	662,112	4,243,578	14.7
Saskatchewan.....	1,104,602	2,674,861	9.3	842,367	2,444,653	8.4
Alberta.....	1,471,811	3,781,761	13.2	1,679,403	3,957,050	13.7
British Columbia.....	722,648	4,419,893	15.4	586,115	4,773,727	16.6
Yukon Territory.....	116,787	105,031	0.4	98,902	125,348	0.4
Northwest Territories.....	316,340	1,319,748	4.6	337,145	888,964	3.1
Canada¹.....	6,237,360	28,737,087	...	5,759,819	28,938,360	...

¹ Totals include a few pelts and their values not allocated to a province or territory.

The ten principal kinds of pelts taken according to their total value in 1961-62 were: ranch mink, 1,269,050 pelts valued at \$18,405,102; beaver, 386,823 pelts at \$4,249,632; wild mink, 147,011 pelts at \$1,992,629; muskrat, 1,524, 363 pelts at \$1,334,229; squirrel, 1,869,940 pelts at \$681,969 (excluding Ontario); white fox, 45,358 pelts at \$534,907; lynx, 47,625 pelts at \$448,052; otter, 17,202 pelts at \$387,371; marten, 36,102 pelts at \$201,809; and ermine, 148,714 pelts at \$135,288. These accounted for 98.1 p.c. of the total value of pelts produced.

3.—Pelts of Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1961 and 1962

Kind	1961			1962		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	\$	\$	No.	\$	\$
Badger.....	827	2,709	3.28	658	1,909	2.90
Bear, white.....	575	34,500	60.00	497	27,102	54.53
Bear, other.....	404	3,297	8.16	2,256	23,499	10.42
Beaver.....	399,459	4,725,877	11.83	386,823	4,249,632	10.99
Coyote or prairie wolf.....	6,156	25,487	4.14	6,789	29,726	4.38
Ermine (weasel).....	197,948	176,285	0.89	148,714	135,288	0.91
Fisher.....	6,206	68,586	11.05	5,863	72,670	12.39
Fox, blue.....	370	2,813	7.60	411	3,044	7.41
Fox, cross and red.....	17,885	50,953	2.85	15,300	51,483	3.36
Fox, silver.....	349	1,756	5.03	351	1,774	5.05
Fox, white.....	51,995	1,013,413	19.49	45,358	534,907	11.79
Fox, not specified.....	18	53	2.94	13	38	2.92
Lynx.....	42,016	449,900	10.71	47,625	448,052	9.41
Marten.....	39,009	205,607	5.27	36,102	201,809	5.59
Mink, wild.....	178,784	2,331,241	13.04	147,011	1,992,629	13.55
Mink, ranch.....	1,203,853	16,888,286	14.03	1,269,050	18,405,102	14.50
Muskrat.....	1,745,576	1,179,642	0.68	1,524,363	1,334,229	0.88
Otter.....	17,408	410,799	23.60	17,202	387,371	22.52
Rabbit.....	186,318	122,381	0.66	192,991	121,459	0.63
Raccoon.....	25,266	44,685	1.77	23,534	47,363	2.01
Skunk.....	1,111	736	0.66	954	560	0.59
Squirrel.....	2,099,046	834,126	0.40	1,869,940	681,969	0.36
Wildcat.....	1,328	2,143	1.60	855	1,728	2.02
Wolf.....	773	10,254	13.27	416	4,110	9.88
Wolverine.....	435	6,554	15.07	387	5,990	15.48
Other.....	14,247	145,004	...	16,356	174,917	...
Totals.....	6,237,360	28,737,087	...	5,759,819	28,938,360	...

Fur Farm Production.—Fur bearing animals were first raised in Canada on farms in Prince Edward Island about 1887 and in Quebec in 1898; today fur farming is carried on in all the provinces. There was a slow but steady increase in the number of farms until 1920 when 587 were reported, followed by a period of more rapid growth to 1938 when the number reached 10,454 with a production value of \$6,500,000. During the war years many fur farms went out of business and although prices rose considerably after the War, operating costs increased and the number of fur farms, particularly those conducted in conjunction with other farming operations, continued to decrease. By 1961 only 2,173 farms reported but the value of their production continued to increase, reaching \$18,580,000. Although there were 158 fewer farms in 1961 than in 1960, the number of animals on such farms at Dec. 31 was nearly 12,000 higher than at the same date of the previous year and the number of fur farm pelts taken during the year increased from 1,218,100 to 1,285,406. Mink accounted for 99.1 p.c. of the value of fur farm production and fur farm production accounted for 64.2 p.c. of total production.

4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1960 and 1961

Province	Fur Farms at Year End		Value of Pelts Produced on Fur Farms	
	1960	1961	1960 ¹	1961
	No.	No.	\$	\$
Newfoundland.....	35	40	426,489	461,473
Prince Edward Island.....	20	15	62,010	66,075
Nova Scotia.....	108	115	528,037	764,777
New Brunswick.....	39	36	71,076	61,795
Quebec.....	313	232	903,745	1,003,870
Ontario.....	667	652	5,038,913	5,743,001
Manitoba.....	249	211	3,078,534	2,798,826
Saskatchewan.....	162	146	1,084,298	1,128,857
Alberta.....	294	308	2,066,397	2,405,796
British Columbia.....	444	418	3,773,355	4,144,169
Totals.....	2,331	2,173	17,033,290¹	18,580,019¹

¹ Includes some pelts not valued by province.

5.—Number of Farms Reporting Fur Bearing Animals, by Kind, as at Dec. 31, 1960 and 1961

Kind	1960		1961	
	Farms	Animals	Farms	Animals
	No.	No.	No.	No.
Fox.....	76	1,576	61	1,274
Mink.....	1,616	516,065	1,578	525,759
Chinchilla.....	531	33,514	440	33,312
Nutria.....	158	7,060	119	5,529

6.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1960 and 1961

Kind	1960 ¹		1961	
	Pelts	Value	Pelts	Value
	No.	\$	No.	\$
Fox.....	2,034	20,340¹	1,815	18,150¹
Blue.....	122	1,220 ¹	99	990 ¹
Platinum.....	529	5,290 ¹	564	5,640 ¹
Silver.....	1,369	13,690 ¹	1,074	10,740 ¹
Unspecified.....	14	140 ¹	78	780 ¹
Mink.....	1,203,853	16,888,286	1,269,050	18,405,102
Standard.....	239,108	2,936,474	228,193	3,428,778
Grey.....	45,447	619,695	43,725	581,615
Dark blue.....	69,908	1,125,705	78,308	1,228,107
Light blue.....	195,326	3,156,790	210,258	3,383,550
Brown.....	476,938	6,286,205	496,588	6,428,412
Beige.....	74,368	1,481,818	127,749	2,305,666
White.....	102,758	1,281,599	84,229	1,048,974
Chinchilla².....	9,067	118,416	10,559	148,617
Nutria.....	3,124	6,248³	3,896	7,792³
Totals.....	1,218,100⁴	17,033,290	1,385,320	18,579,661

¹ Estimated at \$10 per pelt.² Excluding rejects.³ Estimated at \$2 per pelt.⁴ Includes a

ew pelts such as fisher, lynx, marten and raccoon which are not reported separately.

Exports and Imports.—The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being by far the most valuable followed by beaver, fox, squirrel and muskrat. Furs such as Persian lamb, mink, muskrat, fox, raccoon, Kolinsky, and sheep and lamb make up the major portion of the imports. Exports and imports of furs, undressed, dressed and manufactured, from and to the United States, Britain and all countries, are given for the years 1961 and 1962 in Table 7.

7.—Exports and Imports of Furs, by Kind, 1961 and 1962

Kind of Fur	1961			1962		
	Britain	United States	All Countries	Britain	United States	All Countries
Exports						
	\$	\$	\$	\$	\$	\$
Undressed—						
Beaver.....	1,034,179	2,365,912	4,074,681	613,117	2,701,432	3,918,597
Ermine or weasel.....	161,318	29,764	191,213	121,266	22,596	145,818
Fisher.....	32,431	27,749	73,280	8,943	72,691	90,311
Fox, all types.....	50,456	888,147	943,975	20,636	1,043,354	1,072,500
Lynx.....	177,257	192,797	429,288	57,403	527,623	590,188
Marten.....	111,116	153,501	265,925	46,052	198,028	249,023
Mink.....	1,656,172	13,178,153	15,575,451	2,018,413	12,927,634	16,825,397
Muskrat.....	900,320	29,611	1,020,614	775,085	51,906	919,303
Otter.....	6,727	23,278	45,633	6,585	33,915	63,009
Rabbit.....	—	131,801	144,536	—	132,577	134,518
Raccoon.....	17,997	19,216	40,527	—	66,725	69,440
Squirrel.....	785,459	748	786,597	644,917	17,262	662,839
Other.....	79,437	273,991	356,914	383,966	375,768	806,967
Dressed—						
Mink.....	30,697	71,480	398,004	52,046	34,832	380,020
Other.....	92,326	776,217	1,541,276	41,925	1,151,449	1,923,315
Manufactured.....	41,850	271,005	391,235	176,586	353,785	961,347
Totals.....	5,177,742	18,433,370	26,279,119	4,966,940	19,711,577	28,810,592
Imports						
	\$	\$	\$	\$	\$	\$
Undressed—						
China and Jap mink.....	112,033	6,969	476,952	88,271	301	663,851
Fox.....	284,186	118,959	861,866	560,900	224,449	1,061,986
Kolinsky.....	160,258	23,109	483,215	96,337	5,628	386,111
Mink.....	404,294	4,382,555	5,362,532	1,148,576	3,207,800	6,649,542
Muskrat.....	—	1,249,792	1,249,792	—	1,417,581	1,417,581
Persian lamb.....	2,841,203	2,988,651	7,501,525	2,060,303	2,377,531	5,797,940
Rabbit.....	—	28,271	76,073	—	53,096	106,564
Raccoon.....	1,578	542,978	544,556	21,735	577,279	599,014
Squirrel.....	124,082	11,343	145,822	14,898	2,038	19,551
Other.....	100,395	992,807	1,250,468	97,768	686,572	1,057,712
Dressed—						
Rabbit.....	160	31,659	70,083	1,450	37,196	63,958
Hatters' furs.....	71,677	351,804	846,196	72,849	225,786	792,652
Other.....	455,900	2,526,810	3,254,547	397,690	2,505,184	3,192,763
Manufactured.....	29,126	591,479	742,939	11,468	668,489	861,053
Totals.....	4,584,892	13,847,186	22,866,566	4,572,254	11,988,930	22,670,268

Subsection 2.—The Fur Processing Industry*

The rather general term 'fur processing' includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves.

In 1961 the number of skins treated was 6,740,325, of which muskrat comprised 39 p.c., mink 19 p.c., Persian and other types of lamb 16 p.c., squirrel 5 p.c. and raccoon 5 p.c.

8.—Principal Statistics of the Fur Dressing Industry, 1957-61

Item		1957	1958	1959	1960	1961
Establishments.....	No.	16	14	15	17	15
Employees on Salaries—						
Male.....	No.	102	75	82	79	78
Female.....	"	18	15	15	18	17
Employees on Wages—						
Male.....	No.	782	680	766	760	746
Female.....	"	157	138	130	132	131
Salaries paid.....	\$	748,838	485,254	612,446	644,420	565,526
Wages paid.....	\$	2,638,590	2,439,445	2,799,973	2,997,455	3,177,852
Cost of materials used (dyes, chemicals, etc.).....	\$	1,248,961	895,585	1,253,798	1,014,656	1,265,565
Pelts treated.....	No.	8,960,044	8,305,294	7,294,823	7,182,086	6,740,325
Amount received for treatment of furs.....	\$	6,299,336	5,503,408	6,503,695	6,804,986	6,856,000

The implementation of the new "establishment" concept for the 1961 survey brought about marked changes in the statistics of the fur goods industry. The figures for 1957-60, given in Table 9, have been revised on the new basis. Shipments of ladies' fur coats, including boleros and jackets, by all industries in 1961 numbered 168,214 and were valued at \$41,129,186.

* Prepared in the Industry Division, Dominion Bureau of Statistics.

9.—Principal Statistics of the Fur Goods Industry, 1957-61

NOTE.—Figures for 1957-60 have been revised on the basis of the revised Standard Industrial Classification.

Item		1957	1958	1959	1960	1961
Establishments.....	No.	472	430	415	426	444
Employees on Salaries—						
Male.....	No.	882	784	754	745	718
Female.....	"	193	190	206	197	190
Employees on Wages—						
Male.....	No.	2,074	1,859	1,880	1,759	1,751
Female.....	"	1,128	1,066	1,025	1,014	1,017
Salaries paid.....	\$	4,131,254	4,248,604	4,274,471	4,244,819	4,259,013
Wages paid.....	\$	9,575,511	9,313,670	9,819,172	9,229,846	9,472,070
Cost of materials used.....	\$	37,216,513	36,103,054	36,755,775	35,709,589	36,930,703
Value of factory shipments.....	\$	58,065,365	57,148,188	58,763,722	57,542,053	59,553,536

CHAPTER XIV.—MANUFACTURES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter deals with manufacturing in Canada in four Parts. Part I contains a specially prepared treatment of secondary manufacturing in Canada, followed by an outline of the manufacturing situation in 1961. Part II provides general statistical analyses including manufacturing statistics from 1917; detailed treatment of production under various groupings and individual industries; and principal factors in manufacturing production such as capital expenditures and size of establishment. Part III deals with the provincial and local distribution of manufacturing production and Part IV with the functions of the new Department of Industry.

Figures for 1961 were available at the time of going to press for most of the tables of Part II, although certain analyses, such as principal commodities produced and manufactures classified by origin and type of ownership, were not yet complete and 1960 is given as the latest year. Similarly, 1960 is the latest year for certain of the provincial and municipal analyses contained in Part III.

PART I.—REVIEW OF MANUFACTURING

In each edition of the Year Book, this Part contains a general review of the current manufacturing situation, supplemented by additional information, sometimes historical in nature and sometimes dealing in detail with the development of an individual industry. The 1962 edition included, at pp. 600-608, a review of manufacturing production during the period 1945-59 and also, at pp. 609-615, a treatise on the petrochemical industry of Canada. The special articles appearing in previous editions are listed in Chapter XXVI, Part II, Special Articles Published in Former Editions of the Year Book, under the heading of "Manufactures".

The following article deals with a subject of much current interest—the growth and importance of the secondary sector of the manufacturing industries of Canada.

SECONDARY MANUFACTURING IN CANADA*

The economic growth of any nation is characterized by profound changes in the distribution of available resources among the various sectors making up total economic activity. This has been true of the Canadian economy. In the early stages of development, manpower and capital in Canada were concentrated primarily in agriculture, fishing and forestry. With the growing world need for various metals and minerals found in Canada, an increasing proportion of the available manpower and capital resources was shifted to mining. Lacking a sufficient domestic market for the finished goods using these raw materials, manufacturing operations in Canada consisted mainly of primary processing operations producing for export markets. Gradually, however, a growing population with greater purchasing power, concentrated in urban areas, created conditions favourable to the development of secondary manufacturing in Canada.

1.—Summary Statistics of Secondary Manufacturing in Canada, 1925-60

Year	Estab- lish- ments	Employees	Total Salaries and Wages	Cost of Fuel and Electricity Purchased	Cost at Plant of Materials Used	Value of Net Production	Value of Gross Production
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
Av. 1925-29.....	8,935	383,339	451,882	23,887	833,730	885,236	1,741,554
Av. 1935-38.....	10,368	404,102	428,004	36,096	739,269	778,366	1,553,730
1946.....	14,762	732,517	1,212,496	81,680	1,934,869	2,164,398	4,180,945
1947.....	15,579	780,728	1,446,590	99,436	2,513,895	2,651,378	5,264,709
1948.....	15,757	795,912	1,669,510	117,516	2,946,257	3,082,621	6,146,393
1949.....	17,729	811,478	1,789,977	117,852	3,164,483	3,347,383	6,629,726
1950.....	17,848	819,328	1,930,529	132,440	3,558,260	3,697,804	7,388,500
1951.....	18,442	877,344	2,287,992	151,440	4,390,476	4,279,712	8,824,034
1952.....	19,077	902,212	2,562,633	153,535	4,545,027	4,711,198	9,409,762
1953.....	19,439	936,519	2,816,668	163,309	4,750,271	5,116,360	10,029,941
1954.....	19,818	876,653	2,706,403	162,040	4,504,230	4,763,011	9,426,415
1955.....	20,297	896,976	2,872,278	179,897	5,208,367	5,261,823	10,631,548
1956.....	20,376	942,275	3,200,031	205,573	6,089,972	5,886,553	12,003,584
1957.....	21,187	948,153	3,374,864	215,135	6,070,362	6,085,261	12,322,939
1958.....	20,407	890,646	3,318,651	209,639	5,821,248	5,999,805	12,054,806
1959.....	20,224	898,702	3,518,855	225,384	6,282,012	6,529,741	12,885,450
1960.....	20,816	961,030	3,608,955	243,999	6,301,128	6,668,880	13,183,904

Secondary manufacturing† consists mainly of those industrial activities which transform the products of the primary processing industries into intermediate and final consumer products. Secondary manufacturing in Canada, so defined, has expanded rapidly since the mid-1920's. Comparing averages for the periods 1925-29 and 1956-60, the value of goods produced increased more than seven times, employment more than two and a half times, wages and salaries eight times, imports and exports each about six times, and the domestic market about seven times. In addition, the industrial composition of secondary manufacturing has changed significantly. Industries producing consumer semi-durable goods, such as rubber and leather products, have generally become less important in secondary manufacturing. On the other hand, industries producing capital goods, construction goods and supporting intermediate goods have become substantially more

* Prepared by W. L. Posthumus, Economics Branch, Department of Trade and Commerce, Ottawa.

† Secondary manufacturing, as here used, includes the rubber products industry; the leather products industry, excluding the tanning industry; the textiles industry; the knitting and hosiery industry; the clothing industry; the food products industry, excluding saw and planing mills; the paper products industry, excluding the pulp and paper industry; the printing, publishing and allied industries; the iron and steel products industry; the transportation equipment industry; the non-ferrous metal products industry, excluding smelting and refining; the electrical apparatus and supplies industry; the non-metallic mineral products industry, excluding the cement, lime and salt industries; the chemicals and allied products industry, excluding the fertilizer and vegetable oils industries; and the miscellaneous products industry.

important. Associated with this structural change is the greater sophistication of Canadian secondary manufacturing, turning out many highly complex and advanced products such as electronic computers, thermal turbines and generators, diesel engines and reaper-thresher combines. The structural changes in secondary manufacturing reflect the changing pattern of demand in the Canadian economy. A larger proportion of consumer expenditures is directed toward durable goods such as automobiles and appliances and a lesser proportion toward semi-durables, while capital expenditures for buildings and equipment have accounted for an increasing percentage of national income. Moreover, the remarkable technological developments in such areas as electronics and organic chemistry have also substantially influenced the growth of Canadian secondary manufacturing.

In relation to total Canadian economic activity, secondary manufacturing in Canada has grown in importance. From 1956 to 1960 this sector employed an average of 16 p.c. of the employed civilian labour force and produced almost 19 p.c. of the value of gross national production, compared with 10 p.c. and 15 p.c., respectively, for the period 1925-29. In terms of production and employment, secondary manufacturing in Canada has grown even more rapidly than that in the United States. However, despite its less rapid rate of growth, secondary manufacturing in the United States continues to be more significant to the national economy than its Canadian counterpart, accounting in 1960 for 21 p.c. of the labour force and 26 p.c. of gross national production. This difference signifies not so much that secondary manufacturing in Canada is less mature, as the presence of a number of adverse factors inherent to the Canadian economy. Perhaps the most outstanding of these is the relatively small size of the domestic market. This has limited the extent to which Canadian manufacturers could reduce costs by employing mass production techniques. In a small market, too, the production of a wide range of items is not warranted and, as a result, a substantial share of the domestic market accrues to foreign producers. In addition, production costs in Canadian secondary manufacturing have, in many lines, tended to be higher than those of foreign competitors, so that exports account for only a small portion of its total output. Thus, secondary manufacturing in Canada is oriented mainly toward the domestic market. Despite these disadvantages, it is apparent from the development of Canadian secondary manufacturing during the past three or four decades that Canada's stature as an industrial nation has been considerably enhanced.

Production.—From 1925 to 1929 secondary manufacturing in Canada, comprising an average of 8,935 establishments and employing 383,000 people, produced goods valued at \$1,490,000,000. After a sharp decline in the early 1930's, a strong upward trend developed with the industry averaging, over the 1956-60 period, 20,602 establishments and 928,000 employees, and turning out goods valued at \$13,200,000,000. The value of net production, i.e., the value of all goods produced minus the cost of raw materials and fuel and electricity averaged \$885,000,000 over the years 1925-29 and increased to \$6,230,000,000 in 1956-60. This was a more rapid rate of growth than that shown for the economy as a whole as measured by gross national production. In relation to the gross national product, secondary manufacturing increased its relative position, although there has been a decline since 1950. The value of net production of secondary manufacturing accounted for an average of 18.9 p.c. of the gross national product during 1956-60 compared with 15.5 p.c. for 1925-29; the proportion in 1950 was 20.5 p.c. The relative decline since 1950 is not surprising because, as a nation develops economically, a stage is reached where a growing proportion of national expenditures is allocated to services rather than to goods. It would seem that the Canadian economy attained that particular phase of economic development during the early 1950's.

The growth of secondary manufacturing has been marked by significant changes in the importance of individual industries. The impact of the growth of the Canadian market, technological advancement, shifts in the allocation of consumer expenditures, the rapid expansion of capital expenditures and import competition has affected some industries more than others. The value of gross production of the textile, the knitting and hosiery and the clothing industries, as a proportion of total secondary manufacturing, dropped from

an average of 22.3 p.c. during the years 1925-29 to 13.6 p.c. in 1959. The percentage accounted for by the leather products and the rubber products industries declined from 8.9 p.c. to 4.3 p.c. over the same period. On the other hand, the greatest relative growth was realized by the chemical, the electrical apparatus and the transportation equipment industries, whose combined share rose from a little more than 25 p.c. during the 1925-29 period to about 33 p.c. in 1959. The share represented by the non-ferrous metal products industry and the non-metallic mineral products industry rose from 5.5 p.c. to 7.7 p.c., and that by the iron and steel industry from 19.2 p.c. to 23.9 p.c. The secondary manufacturing activities related to wood and paper, including printing and publishing, retained their relative position, accounting for one seventh or about 14 p.c. of total secondary manufacturing in both 1925-29 and 1959. In general, the industries producing consumer semi-durables have declined in relative terms while those turning out consumer durables, capital equipment and construction goods have increased their contribution to over-all output.

Foreign Trade.—Imports and exports of commodities produced by secondary manufacturing have risen more than sevenfold during the past thirty-five years, the former from \$632,000,000 to \$4,690,000,000 and the latter from \$154,000,000 to \$1,100,000,000. Imports of secondary manufactures have consistently exceeded exports, so that Canada's foreign trade in these commodities has resulted in a deficit. This imbalance has increased from an average of \$478,000,000 during the 1926-29 period to \$3,560,000,000 in 1962.

2.—Foreign Trade in Goods Produced by Secondary Manufacturing, 1926-62

Year	Imports	Exports	Deficit on Trade Balance
	\$'000	\$'000	\$'000
Av. 1926-29.....	632,961	154,134	— 478,827
Av. 1935-38.....	332,631	129,399	— 203,232
1946.....	1,136,329	481,651	— 654,678
1947.....	1,578,716	548,919	— 1,029,797
1948.....	1,455,158	540,835	— 914,323
1949.....	1,634,722	484,739	— 1,149,983
1950.....	1,790,539	434,961	— 1,355,578
1951.....	2,438,761	620,062	— 1,818,699
1952.....	2,618,064	719,776	— 1,898,288
1953.....	2,999,587	649,277	— 2,350,310
1954.....	2,741,362	569,680	— 2,171,682
1955.....	3,206,925	640,674	— 2,566,251
1956.....	3,968,908	668,246	— 3,300,662
1957.....	3,880,490	753,962	— 3,126,528
1958.....	3,611,345	762,556	— 2,848,789
1959.....	3,909,621	790,274	— 3,119,347
1960.....	3,958,568	862,746	— 3,095,822
1961.....	4,250,516	949,177	— 3,301,339
1962.....	4,689,994	1,124,439	— 3,565,555

Imports of secondary manufactured goods have accounted for a growing proportion of total Canadian imports. Over the 1926-29 period this proportion averaged 54.8 p.c., but dropped to an average of 51.7 p.c. during 1935-38 as a result of the additional protection granted domestic secondary manufacturing during the depression years. However, it rose thereafter, reaching 61.7 p.c. in 1946 and 74.9 p.c. in 1962. Thus imports of goods produced by secondary manufacturing currently represent three quarters of all of Canada's imports.

In value terms, iron and steel products are the largest group of secondary manufactured imports, comprising 32.8 p.c. of the 1962 total. Imports of transportation equipment accounted for 17.3 p.c., rubber, leather and miscellaneous products for 16.7 p.c., textiles and clothing for 8.2 p.c., electrical apparatus 7.9 p.c., non-ferrous metal and non-metallic mineral products 5.6 p.c., and wood and paper products 4.3 p.c. Import groups that

have increased in relative as well as absolute terms since 1926 include transportation equipment, which rose from an average of 12.6 p.c. for 1926-29 to 17.3 p.c. in 1962, electrical apparatus from 4.2 p.c. to 7.9 p.c. and rubber, leather and other miscellaneous commodities from 11.3 p.c. to 16.5 p.c. Imports of textiles and clothing have shown the greatest stability of any group over the 1926-62 period, and have become much less significant in relative terms, their proportion of the total declining from an average of 22.9 p.c. in the 1926-29 period to only 8.2 p.c. in 1962.

Exports of commodities produced by secondary manufacturing have become more important than in 1926, rising from an average of \$154,000,000 or 12.5 p.c. of all exports in 1926-29 to \$1,120,000,000 or 18.2 p.c. of the total in 1962. This growth has been accompanied by substantial changes in composition. In 1926-29, exports of transportation equipment accounted for 25.2 p.c. of the total compared with 9.8 p.c. in 1960, while the share of rubber, leather and miscellaneous commodities has fallen from 30.3 p.c. to 7.3 p.c. Groups gaining in relative importance over the period include iron and steel products which rose from 22.6 p.c. of the 1926-29 total to 43.3 p.c. of the 1962 total, chemicals and allied products from 8.4 p.c. to 20.9 p.c., electrical apparatus from 2.4 p.c. to 5.6 p.c., and non-ferrous metal and non-metallic mineral products from 4.1 p.c. to 6.4 p.c.

Despite the rapid growth and development of domestic secondary manufacturing, Canadian imports have continued to be mainly products of secondary manufacturers and exports mainly raw materials and commodities produced by primary processing industries. Nevertheless, it is significant that since 1926, and especially during the past three years, secondary manufacturing in Canada has contributed an increasing proportion to Canadian exports.

The Domestic Market.—The domestic market for goods produced by secondary manufacturing has expanded rapidly and Canadian secondary manufacturing has become more dependent for its growth on this market. The growth of the domestic market has been the result of an expanding population with larger incomes and a propensity for spending an increasing proportion of its income on durables. In addition, the growth in the proportion of the national income expended on capital investment has meant increased demands for construction goods and capital equipment. Consequently, the domestic market for consumer durables, construction goods, and capital equipment has risen more rapidly than has the demand for consumer semi-durables.

The domestic market for secondary manufactures increased from an average of \$2,300,000,000 in the 1925-29 period to \$16,000,000,000 in 1960. Of this growing market, Canadian secondary manufacturing held a larger share in the postwar years than in 1926-29, despite the great expansion in imports. On the other hand, while exports of secondary manufactures have become a more significant part of total Canadian exports, their share of total output has actually declined. Over the years 1926-29, an average of 27.7 p.c. of the domestic market for secondary manufactures was supplied by foreign producers. This proportion dropped to an average of 19.0 p.c. during the period 1935-38, because of the low level of investment and the higher level of tariff protection that resulted from the Imperial Economic Conference of 1932. By 1947 the proportion of the Canadian market accruing to foreign producers had again risen to 25.1 p.c., and this level was generally maintained during the postwar period, with the exception of 1948 and 1949 when foreign exchange controls restrained imports. The domestic market took 93.9 p.c. of the output of Canadian secondary manufacturing in 1960 compared with an average of 91.5 p.c. in the 1926-29 period. Exports by secondary manufacturing declined over this period from an average of 8.5 p.c. of total output to 6.1 p.c. In summary, secondary manufacturing has become more and more oriented toward the domestic market.

The share of the domestic market for secondary manufactures obtained by foreign producers rose most significantly for rubber and leather products and for clothing and textiles. On the other hand, the wood products industry, the paper products industry

and the non-metallic mineral products industry—resource-based secondary industries—were successful in reducing import competition. In respect to foreign markets, each secondary manufacturing industry, except the chemicals and allied products industry and the iron and steel products industry, has exported a declining proportion of its total output and has consequently become more dependent on domestic sales. This trend was most marked for the transportation industry, which exported an average of 13.6 p.c. of its value of production in the 1926-29 period and only 3.7 p.c. of its 1959 output, the knitting industry where exports fell from 5.6 p.c. to 0.1 p.c., and the rubber products industry which exported 31.4 p.c. in 1926-29 and 3.3 p.c. in 1959.

In the more recent years the incidence of imports on the domestic market has been greatest for iron and steel products, with Canadian manufacturers supplying 60 p.c. to 65 p.c. and foreign producers the remainder. For chemicals and allied products, transportation equipment, electrical apparatus and supplies, non-metallic mineral products, textiles and non-ferrous metal products, Canadian manufacturers have been supplying about 75 p.c. to 80 p.c. of the domestic market, and for the remaining secondary manufactured commodities 90 p.c. or more. With regard to producing for export markets, the chemicals and allied products industry ranks first among the other secondary industries, shipping 13 p.c. of its output abroad; the iron and steel products industry ranks second with 10 p.c. of output going to export markets. The other secondary manufacturing industries produce almost their entire output for the domestic market. Thus, neither the net replacement of imports, encouraging though this has been, nor production for foreign markets has contributed significantly to the development and growth of secondary manufacturing in Canada which, since 1925, has been attributable almost entirely to the expansion of the domestic market.

Employment and Earnings.—Employment in secondary manufacturing has expanded more than two and a half times from an annual average of 383,000,000 for 1925-29 to 928,000,000 in 1956-60. Such manufacturing has comprised a growing segment of the Canadian labour market, and today accounts for about one sixth of the total employed civilian labour force, compared with one tenth in 1925-29. During the early 1950's, employment in secondary manufacturing reached a peak of 18 p.c. of total employment, and has since declined somewhat in relative terms. As stated previously, the rise and fall in the relative importance of secondary manufacturing in the Canadian economy are phenomena associated with the process of economic growth and in part indicate that Canadian economic development has reached the stage where an increasing proportion of available resources is directed to the service-producing sector rather than to the goods-producing sector.

In terms of employment, the significance of the individual secondary industries has changed substantially. The durable goods producing industries, particularly the electrical apparatus and supplies, the iron and steel products, and the non-metallic mineral products industries, have become much more important as sources of employment, while the industries manufacturing semi-durables, notably the rubber, leather and textile products industries, have receded in importance. At present, the iron and steel products industry is the largest employer in secondary manufacturing, accounting for more than 20 p.c. of the total for this sector, and is followed by the transportation equipment industry which provides around 14 p.c. of the job total. Industries with 10 p.c. to 15 p.c. of total employment in secondary manufacturing are, in order of relative importance, the clothing industry, the electrical apparatus and supplies industry, the publishing and printing industry, the textiles industry and the chemical and allied products industry. Employment in each of the remaining industries ranges from 2 p.c. to 5 p.c. of the total.

Wages and salaries paid out by secondary manufacturing have increased about eightfold during the past thirty-five years, from an average of \$452,000,000 during 1925-29 to \$3,600,000,000 in 1960. Average annual earnings per employee more than tripled during that period, rising from \$1,179 to \$3,916, and have been consistently greater than average

earnings in all manufacturing, although the difference has been small. At present, average earnings range from about \$2,500 in the knitting and hosiery industry to \$4,700 in the transportation equipment industry, which is a wider range than in 1925. Throughout the period under study, the growth industries have had average earnings exceeding those for secondary manufacturing as a whole, while those in the declining industries have tended to be below the industry average.

The salaries and wages paid out by secondary manufacturing amounted to an average 51 p.c. of the value of net production from 1925 to 1929 but by 1946, with most of the increase having occurred during the prewar years, the proportion had risen to 56 p.c. During the postwar years it dropped initially to 52.2 p.c. in 1950 and has subsequently fluctuated between 54 p.c. and 55 p.c. By comparison, United States salaries and wages in secondary manufacturing increased from 51.7 p.c. of net production in 1925 to 58.2 p.c. in 1960. The secondary industries in Canada with the highest relative labour cost in 1960 were the leather products industry, 64.0 p.c., the wood products industry, 62.8 p.c., and the clothing industry, 62.0 p.c. The Canadian industries in secondary manufacturing with the lowest labour costs in relation to the net value of production were the chemicals and allied products industry, 35.5 p.c., and the rubber products industry, 46.2 p.c. The most rapid advances in wages and salaries relative to net production have occurred in the rubber products industry, from an average of 37.4 p.c. in 1925-29 to 46.2 p.c. in 1959, and in the electrical apparatus industry, from 44.5 p.c. to 56.0 p.c. Only the transportation equipment industry has shown a reduction in its labour cost relative to net production, from 65.4 p.c. to 58.2 p.c., although a substantial increase has occurred since 1950 at which time the percentage was 52.4. Thus, over the past thirty-five years or so, labour's share of net production in secondary manufacturing has grown both in the sector as a whole and in most individual industries.

The volume of net production per man-year in Canadian secondary manufacturing was almost 50 p.c. higher in the period 1956-59 than in 1925-38. Technological progress, requiring more complex machinery and equipment and people with greater technical skills, was the most influential factor contributing to the greater annual real output per employee. Production per man-hour in volume terms, making allowance for an approximate 15-p.c. reduction in annual man-hours, was almost 63 p.c. greater in 1956-59 than in 1935-38. Performances by individual secondary industries in this regard varied widely. The paper products, the non-metallic mineral products and the chemical industries showed the greatest gains in net production per man-year, with increases of 99.4 p.c., 99.2 p.c. and 96.5 p.c., respectively. The smallest gains were 9.7 p.c. for the clothing industry and 11.2 p.c. for the wood products industry. Between these two extremes were the rubber products industry with an increase of 52.1 p.c. in the volume of net production per man-year, the leather products industry 28.5 p.c., the textiles industry 56.7 p.c., the knitting and hosiery industry 86.7 p.c., the printing and publishing industry 28.0 p.c., the iron and steel products industry 41.2 p.c., the transportation equipment industry 32.5 p.c., the non-ferrous metal products industry 47.0 p.c., and the electrical apparatus industry 61.6 p.c.

In summary, Canadian secondary manufacturing has provided employment for an increasing number of people, and these workers have produced more and have earned more than ever before in history. Thus, secondary manufacturing has been able to make a greater contribution to Canada's economic growth and the rising living standards of its people.

Capital Expenditures.—The growth of secondary manufacturing in Canada could not have been realized without a simultaneous expansion of production capacity, by both the addition of new facilities and the modernizing of old ones. Over the 1948-62 period, capital expenditures in secondary manufacturing totalled \$6,760,000,000 and rose from an annual average of \$318,000,000 in 1948-52 to \$534,000,000 in 1958-62.

3.—Capital Expenditures in Secondary Manufacturing, 1948-62

Year	Amount	Year	Amount
	\$'000		\$'000
1948.....	251,778	1956.....	585,042
1949.....	250,232	1957.....	657,488
1950.....	216,427	1958.....	471,518
1951.....	376,584	1959.....	540,307
1952.....	494,852	1960.....	574,020
1953.....	502,435	1961.....	518,394
1954.....	370,639	1962.....	567,140
1955.....	381,217		

The importance of the individual secondary industries as areas for investment has changed substantially during this fifteen-year period. Investment in the iron and steel products industry rose from an average of \$77,000,000, or 24.3 p.c. of the 1948-52 total, to \$159,000,000, or 29.7 p.c. of the 1958-62 aggregate. The chemicals and allied products industry, which accounted for an average of 17.3 p.c. in 1958-62, also attracted a growing proportion of the total investment in secondary manufacturing. Capital expenditures in the textile and clothing industries declined absolutely as well as relatively from an average of \$46,000,000 or 14.4 p.c. in 1948-52 to \$39,000,000 or 7.4 p.c. in 1958-62. The electrical apparatus industry and the transportation equipment industry also declined as areas for investment over this period. Capital expenditures in the rubber and leather products industries, the wood and paper products industries, the non-ferrous metal products and the non-metallic mineral products industries remained unchanged in relation to total investment in secondary manufacturing. The available data also indicate that a declining proportion of total Canadian capital expenditures is being devoted to secondary manufacturing. This trend appears to have developed after 1952, when 9.0 p.c. of that year's total investment was allocated to secondary manufacturing compared with 6.5 p.c. in 1962. This decline reflects the growing emphasis being placed on service facilities.

During the past thirty-five years the Canadian economy has become more industrialized. This is evident in the relative as well as the absolute growth of Canadian secondary manufacturing. The most important factor contributing to the development of Canadian secondary manufacturing since 1925 has been the rapidly expanding domestic market. Import replacement and production for export accounted for only a small portion of the progress achieved in this sector. For the future, Canadian secondary manufacturing can be expected to continue to expand at a rate at least in line with the growth of the domestic market. An even more rapid growth rate can be anticipated in the event of a substantial net replacement of imports and a higher level of production for export.

The Manufacturing Situation in 1961

The recovery in manufacturing production that took place during 1959 and was maintained more or less in 1960 was followed by a year of increased activity. In 1961, the value of factory shipments amounted to \$24,243,294,949 and the value added by manufacture to \$10,682,137,680, both the highest on record. Salaries and wages paid, at \$5,231,446,969, were slightly higher than in 1960 and were also the highest on record. The index of the physical volume of production stood at 153.0, 2.5 p.c. higher than in 1960 and 2.1 p.c. above the previous high attained in 1959. Despite the increase in volume of production, the number of employees, at 1,265,302, was a little lower than in 1960, following the trend in recent years for the same volume of goods to be produced with fewer employees. In the 1949-61 period, the volume of manufactures produced increased by 53 p.c. and the number of persons employed by only 8 p.c. The higher salaries and wages paid in 1961 reflected the continuing advance in earnings, a trend common to all sectors of the economy.

It should be noted also that the addition of about 368,000 persons to the population in 1961 supplemented labour income and had a stimulating influence on the output of the consumer goods industries.

Of tremendous importance in sustaining the level of production in 1961 was the continued high spending on capital goods. Although the total investment in capital goods, amounting to \$8,172,000,000, was \$90,000,000 lower than the total for 1960, the \$5,518,000,000 spent for construction was \$65,000,000 higher. Thus the decrease in the total was more than accounted for by the decrease in the portion spent for machinery and equipment which, at \$2,654,000,000, was down by \$155,000,000 compared with 1960. The high level of construction activity and an increase in exports of timber and lumber was reflected in increases of 4.4 p.c. in the volume of output of the non-metallic mineral products group and of 2.6 p.c. in the volume of output of the wood industries group.

Export demand for Canadian manufactured products was also a strong factor in stimulating production in 1961. Exports of fabricated materials advanced from \$2,874,300,000 in 1960 to \$2,916,400,000, an increase of 1.5 p.c., and substantial improvements were shown in the amounts of timber and lumber, wood pulp, newsprint, whisky, nickel, fertilizers, aircraft, lead and lead products, non-farm machinery and synthetic plastics going abroad. At the same time declines occurred in such major export items as shingles, veneer and plywood, wheat flour, farm implements and machinery, aluminum and its products, copper and its products, zinc, automobiles and parts, artificial abrasives, synthetic rubber and plastics and uranium ores and concentrates.

As already mentioned, the index of the physical volume of production for manufacturing as a whole reached an all-time high of 153.0 in 1961. During 1960 and 1961 the volume of non-durable or consumer goods produced increased 3.4 p.c. and the volume of durable goods advanced 1.4 p.c. Since the end of World War II, production of the non-durable goods industries experienced an almost uninterrupted expansion but recorded an increase in volume of only 54 p.c. between 1946 and 1956, while durable goods increased 92 p.c. in the same period. The gap between the two sectors was narrowed in the years 1957-61, so that for the whole period 1946-61 durable goods expanded 86 p.c. and non-durable goods 75 p.c.

All industries producing non-durable goods, with the exception of the clothing and knitting mills group, reported increased volume in 1961. The miscellaneous industries group increased by 11.2 p.c., followed by leather products with an increase of 10.7 p.c., textiles 9.9 p.c., tobacco and tobacco products 6.4 p.c., paper products 3.4 p.c., products of petroleum and coal 3.3 p.c., foods 2.8 p.c., beverages 2.1 p.c., rubber and rubber products 1.7 p.c., printing, publishing and allied industries 1.1 p.c. and chemicals and allied products 1.1 p.c. Volume output of clothing factories and knitting mills declined 0.7 p.c. The significant feature was the upsurge in the output of leather products and textiles. These two groups, which had been operating for some years at comparatively low levels, materially bettered their positions during 1961. The clothing and knitting industries, however, still had the smallest increase in volume since 1949 in both the non-durable and durable goods sectors.

In the durable goods sector the trend in 1961 was mixed; four groups increased and two declined. The non-metallic mineral products group reported the highest increase of 4.4 p.c., followed by wood products with 2.6 p.c., iron and steel products 1.5 p.c. and electrical apparatus and supplies 1.3 p.c. The output of non-ferrous metal products dropped 0.5 p.c. and transportation equipment 0.2 p.c.

The level of manufacturing activity in 1961, as measured by the number of persons employed, was lower in all provinces except Newfoundland and New Brunswick; these provinces recorded increases of 6.1 p.c. and 1.2 p.c., respectively. The greatest loss in employment was suffered by Nova Scotia with a drop of 4.8 p.c. This was followed by Saskatchewan with a decrease of 3.9 p.c., British Columbia 2.3 p.c., Alberta and Quebec 1.8 p.c., Manitoba 1.6 p.c., Ontario 1.2 p.c. and Prince Edward Island 0.3 p.c. Perhaps the most outstanding feature was the reversal in the trend of manufacturing employment in Saskatchewan which, after three successive years of increases, reported the second largest decline.

PART II.—STATISTICS OF MANUFACTURING

Section 1.—Growth of Manufacturing

It is impossible to give absolutely comparable statistics of manufacturing over a long period of years. From 1870 to 1915 statistics were collected only in connection with decennial or quinquennial censuses and there was inevitably some variation in the information collected. The annual Census of Manufactures was instituted in 1917 and, though numerous changes have since been made in the information collected and in the treatment of the data, an effort has been made to carry all major revisions back to 1917, so that the figures for the period since then are on a reasonably comparable basis.

The Bureau of Statistics in 1952 changed its policy with regard to the collection of statistics on the production of manufactured goods. Firms in several industries where year-end inventory changes were known to be insignificant were requested to report value of shipments f.o.b. plant instead of gross value of products. The changeover was made in order to ease the burden of reporting for the majority of manufacturing establishments. The value of shipments concept for small and medium sized establishments is more realistic and more readily obtainable from their accounting records. From 1957 on, the figures are based on the revised Standard Industrial Classification, as explained on p. 651.

Because of a change in the definition of the reporting unit (establishment) in the 1961 Census of Manufactures, the statistics for 1961 are not directly comparable with those of previous years. On the revised basis, the total value of shipments in 1960 was \$23,279,804,128, lower by \$467,652,955 than the 1960 figure compiled on the old basis. Revisions back to 1957 will be published in the 1961 reports of the Industry Division of DBS and will appear in the next issue of the Year Book.

1.—Summary Statistics of Manufactures, 1917-61

NOTE.—Figures for alternate years from 1918 to 1940 are given in the 1962 Year Book, p. 616. Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a basis comparable to the series given below; statistics for significant years appear in the 1943-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

Year	Estab- lish- ments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Gross Value of Products ²
	No.	No.	\$	\$	\$	\$
1917.....	21,845	606,523	497,801,844	1,539,678,811	1,281,131,980	2,820,810,791
1919.....	22,083	594,066	601,715,668	1,779,056,765	1,442,400,638	3,221,457,403
1921.....	20,848	438,555	497,399,761	1,365,292,885	1,123,694,263	2,488,987,148
1923.....	21,080	506,203	549,529,631	1,456,595,367	1,206,332,107	2,662,927,474
1925 ³	20,981	522,924	569,944,442	1,571,788,252	1,167,936,726	2,816,864,958
1927 ³	21,501	595,052	662,705,332	1,741,128,711	1,427,649,292	3,257,214,876
1929 ³	22,216	666,531	777,291,217	2,029,670,813	1,755,386,937	3,883,446,116
1931.....	23,083	528,640	587,566,990	1,221,911,982	1,252,017,248	2,555,126,448
1933.....	23,780	468,658	436,247,824	967,788,928	919,671,181	1,954,075,785
1935.....	24,034	556,664	559,467,777	1,419,146,217	1,153,485,104	2,653,911,209
1937.....	24,834	660,451	721,727,037	2,006,926,787	1,508,924,867	3,625,459,500
1939.....	24,805	658,114	737,811,153	1,836,159,375	1,581,051,901	3,474,783,528
1941.....	26,293	961,178	1,264,862,643	3,296,547,019	2,605,119,788	6,076,308,124
1942.....	27,862	1,152,091	1,682,804,842	4,037,102,725	3,309,973,758	7,553,794,972
1943.....	27,652	1,241,068	1,987,292,384	4,690,493,083	3,816,413,541	8,732,860,999
1944.....	28,483	1,222,882	2,029,621,370	4,832,333,356	4,015,776,010	9,073,692,519
1945.....	29,050	1,119,372	1,845,773,449	4,473,668,847	3,564,315,899	8,250,368,866
1946.....	31,249	1,058,156	1,740,687,254	4,358,234,766	3,467,004,980	8,035,692,471
1947.....	32,734	1,131,750	2,085,925,966	5,534,280,019	4,292,055,802	10,081,026,580
1948.....	33,420	1,155,721	2,409,368,190	6,632,881,628	4,938,786,981	11,875,169,685

For footnotes, see end of table, p. 646.

1.—Summary Statistics of Manufactures, 1917-61—concluded

Year	Estab- lish- ments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Gross Value of Products ²
	No.	No.	\$	\$	\$	\$
1949 ⁴	35,792	1,171,207	2,591,890,657	6,843,231,064	5,330,566,434	12,479,593,300
1950 ⁴	35,942	1,183,297	2,771,267,435	7,538,534,532	5,942,058,229	13,817,526,381
1951.....	37,021	1,258,375	3,276,280,917	9,074,526,353	6,940,946,783	16,392,187,132
1952.....	37,929	1,288,382	3,637,620,160	9,146,172,494	7,443,533,199	16,982,687,035
1953.....	38,107	1,327,451	3,957,018,348	9,380,558,682	7,993,069,351	17,785,416,854
1954.....	38,028	1,267,966	3,896,687,691	9,241,857,554	7,902,124,137	17,554,527,504
1955.....	38,182	1,298,461	4,142,409,534	10,338,202,165	8,753,450,496	19,513,933,811
1956.....	37,428	1,353,020	4,570,692,190	11,721,536,889	9,605,424,579	21,636,748,986
BASED ON REVISED STANDARD INDUSTRIAL CLASSIFICATION ⁵						
1957.....	36,578	1,355,313	4,809,218,401	11,846,064,933	9,702,351,523	22,090,916,094
1958.....	35,501	1,286,758	4,796,102,682	11,770,562,428	9,857,742,613	22,064,460,808
1959.....	35,075	1,300,765	5,062,744,615	12,496,864,441	10,306,282,267	23,204,208,671
1960 ⁴	36,682	1,294,629	5,207,167,393	12,705,070,820	10,533,208,994	23,747,457,083
1961 ⁷	32,415	1,265,032	5,231,446,969	13,127,707,976	10,682,137,680	24,243,294,949

¹ For 1924-51, inclusive, the value added by manufacture is computed by subtracting cost of fuel, electricity and materials from gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. ² Figures prior to 1924 are not comparable because statistics for cost of electricity are not available. ³ In 1952 gross value of products was replaced by selling value of factory shipments; see text immediately preceding this table. ⁴ A change in the method of computing the number of employees in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in force prior to 1925 was re-adopted. ⁵ Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included. ⁶ See text on p. 651. ⁷ Includes two industries not covered in previous years; poultry processors in the food and beverage group and dental laboratories in the miscellaneous industries group. ⁸ Not strictly comparable with previous years; see third paragraph, p. 645.

2.—Summary Statistics of Manufactures, by Province, 1957-61

NOTE.—Based on the revised Standard Industrial Classification and not comparable with statistics for significant years back to 1917 published in previous editions of the Year Book. See text on p. 645.

Province and Year	Estab- lish- ments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland—						
1957.....	901	10,452	32,773,380	53,947,998	56,339,618	117,640,668
1958.....	754	9,600	29,226,969	52,103,887	58,339,411	116,903,907
1959.....	786	9,623	30,598,401	53,954,361	57,318,077	118,938,686
1960.....	635	9,489	32,703,188	58,903,797	64,560,269	129,284,573
1961 ²	338	9,896	35,969,805	60,628,868	70,009,989	137,224,209
Prince Edward Island—						
1957.....	189	1,613	3,212,374	17,999,511	6,093,779	24,493,412
1958.....	175	1,610	3,333,260	18,978,311	7,056,830	26,458,380
1959.....	174	1,721	3,774,651	19,618,122	7,293,080	27,264,874
1960.....	184	1,806	4,254,917	21,220,060	8,690,360	30,231,361
1961 ²	156	1,724	4,207,474	21,191,058	8,131,146	30,041,039
Nova Scotia—						
1957.....	1,294	31,324	90,185,922	229,876,316	171,324,308	414,903,068
1958.....	1,237	28,762	85,421,927	210,221,415	174,904,448	400,767,866
1959.....	1,257	27,997	87,250,746	215,198,733	158,359,003	386,470,411
1960.....	1,278	28,606	92,280,125	220,292,841	174,808,237	406,182,088
1961 ²	1,002	26,801	88,919,256	206,463,487	159,218,497	375,305,900

¹ See footnote 1, Table 1.² Not strictly comparable with previous years; see third paragraph, p. 645.

2.—Summary Statistics of Manufactures, by Province, 1957-61—concluded

Province or Territory and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
New Brunswick—						
1957.....	964	20,975	60,477,787	174,685,390	122,893,918	311,715,799
1958.....	922	20,734	61,059,451	170,494,005	130,573,966	311,927,294
1959.....	900	20,921	63,871,690	178,022,837	133,411,396	325,414,733
1960.....	901	22,267	71,586,377	209,113,069	158,035,175	377,110,146
1961 ²	708	22,443	73,892,368	223,050,728	159,979,430	397,456,695
Quebec—						
1957.....	11,920	448,617	1,476,588,663	3,578,906,458	2,909,664,556	6,675,641,610
1958.....	11,507	428,553	1,474,737,937	3,604,113,294	3,061,265,464	6,748,747,620
1959.....	11,293	430,531	1,545,790,163	3,760,205,098	3,003,262,640	6,915,449,758
1960.....	11,961	433,949	1,620,314,474	3,881,172,827	3,172,769,694	7,206,096,003
1961 ²	10,955	423,729	1,626,572,189	3,982,419,548	3,207,856,006	7,327,257,662
Ontario—						
1957.....	13,079	642,481	2,425,331,675	5,781,130,876	5,002,690,629	11,020,527,114
1958.....	12,801	605,839	2,413,610,158	5,667,200,473	4,907,056,284	10,810,470,125
1959.....	12,650	614,480	2,560,103,902	6,143,081,617	5,322,722,752	11,599,765,654
1960.....	13,387	603,467	2,585,676,553	6,126,027,277	5,319,683,901	11,685,675,652
1961 ²	12,081	591,501	2,597,408,249	6,337,292,819	5,429,853,032	11,957,329,553
Manitoba—						
1957.....	1,485	43,738	139,794,593	379,176,924	269,918,246	663,290,931
1958.....	1,536	42,022	141,286,373	396,881,181	281,190,697	690,545,053
1959.....	1,522	43,007	153,613,079	421,542,217	308,312,242	742,183,196
1960.....	1,592	42,339	154,263,811	419,583,431	306,434,692	738,457,346
1961 ²	1,416	41,212	157,302,360	441,440,322	315,235,281	769,894,639
Saskatchewan—						
1957.....	803	11,942	40,678,214	188,694,088	106,957,193	304,646,672
1958.....	927	12,191	42,941,559	198,362,095	119,065,901	329,434,760
1959.....	840	12,407	46,532,277	212,568,673	123,974,515	344,084,883
1960.....	887	12,918	49,764,266	215,404,848	119,776,935	344,773,261
1961 ²	675	12,149	48,947,762	218,815,222	120,971,938	344,432,203
Alberta—						
1957.....	1,796	38,598	134,907,636	454,160,456	300,711,511	770,250,899
1958.....	1,672	37,402	138,039,307	488,146,978	328,927,613	833,105,391
1959.....	1,750	39,016	149,969,677	516,032,439	338,032,355	869,404,244
1960.....	1,848	39,157	156,339,528	524,908,916	353,197,544	889,657,800
1961 ²	1,569	37,921	157,348,484	568,732,861	346,731,838	933,826,476
British Columbia—						
1957.....	4,125	105,407	404,610,392	985,859,605	754,342,979	1,784,584,855
1958.....	3,952	99,900	405,767,584	961,320,605	788,363,705	1,792,120,923
1959.....	3,981	100,947	420,629,945	974,483,535	852,929,943	1,872,399,846
1960.....	3,995	100,507	439,368,651	1,026,998,973	853,836,400	1,936,917,630
1961 ²	3,602	97,518	440,197,776	1,065,073,007	863,442,538	1,967,091,438
Yukon and N.W.T.—						
1957.....	22	166	657,765	1,627,311	1,414,786	3,221,268
1958.....	16	145	678,157	2,740,184	998,294	3,979,489
1959.....	12	115	610,084	2,156,809	666,264	2,832,386
1960.....	14	124	615,503	1,444,781	1,325,787	3,071,218
1961 ²	13	138	681,246	2,600,056	707,985	3,434,135

¹ See footnote 1, Table 1, p. 646.
p. 645.² Not strictly comparable with previous years; see third paragraph.

The figures in Table 3 trace the tendencies in manufacturing industries as clearly as possible from 1917 to 1961. In analysing statistics of production and materials used, price changes should be borne in mind, particularly the inflation of values in the years immediately following World War I, the drop in prices of commodities during the depressions following 1921 and 1930, and the increases again in World War II and the postwar period.

3.—Significant Statistics of Manufactures for Certain Years 1917-61

Item	1917	1920	1929 ¹	1933	1939
Establishments.....No.	21,845	22,532	22,216	23,780	24,805
Total employees....."	606,523	598,893	666,531	468,658	658,114
Av. per establishment....."	27.8	26.6	30.0	19.7	26.5
Total earnings.....\$	497,801,844	717,493,876	777,291,217	436,247,824	737,811,153
Av. per establishment.....\$	22,758	31,843	34,988	18,345	29,744
Av. per employee.....\$	821	1,198	1,166	931	1,121
Supervisory and office employees.....No.	64,918	78,334	88,841	86,636	124,772
Av. per establishment....."	3.0	3.5	4.0	3.6	5.0
Total earnings.....\$	85,353,667	141,837,361	175,553,710	139,317,946	217,839,334
Av. per employee.....\$	1,315	1,811	1,976	1,608	1,746
Production workers.....No.	541,605	520,559	577,690	382,022	533,342
Av. per establishment....."	24.8	23.1	26.0	16.1	21.5
Total earnings.....\$	412,448,177	575,656,515	601,737,507	296,929,878	519,971,819
Av. per employee.....\$	762	1,106	1,042	777	975
Cost of materials.....\$	1,539,678,811	2,085,271,649	2,029,670,813	967,788,928	1,836,159,375
Av. per establishment.....\$	70,482	92,547	91,361	40,698	74,024
Av. per employee.....\$	2,539	3,482	3,045	2,065	2,790
Value added by manufacture ¹\$	1,281,131,980	1,621,273,348	1,755,386,937	919,671,181	1,531,051,901
Av. per establishment ²\$	58,646	71,954	79,015	38,674	61,724
Av. per employee ²\$	2,112	2,707	2,634	1,962	2,326
Gross value of products.....\$	2,820,810,791	3,706,544,997	3,883,446,116	1,954,075,735	3,474,783,528
Av. per establishment.....\$	129,128	164,501	174,804	82,173	140,084
Av. per employee.....\$	4,651	6,189	5,286	4,170	5,280
	1944	1949	1953	1960 ^{3,4}	1961 ⁴
Establishments.....No.	28,483	35,792	38,107	36,682	32,415
Total employees....."	1,222,832	1,171,207	1,327,451	1,294,629	1,265,032
Av. per establishment....."	42.9	32.7	34.8	35.3	39.0
Total earnings.....\$	2,029,621,370	2,591,890,657	3,957,018,348	5,207,167,393	5,231,446,969
Av. per establishment.....\$	71,257	72,415	103,840	141,954	161,390
Av. per employee.....\$	1,660	2,213	2,981	4,022	4,135
Supervisory and office employees.....No.	192,558	221,551	274,225	309,644	295,670
Av. per establishment....."	6.8	6.2	7.2	8.4	9.1
Total earnings.....\$	418,065,594	628,427,937	1,016,679,409	1,606,967,827	1,585,333,662
Av. per employee.....\$	2,171	2,836	3,707	5,190	5,362
Production workers.....No.	1,030,324	949,656	1,053,226	984,985	969,362
Av. per establishment....."	36.2	26.5	27.6	26.9	29.9
Total earnings.....\$	1,611,555,776	1,963,462,720	2,940,338,939	3,600,199,566	3,646,113,307
Av. per employee.....\$	1,564	2,068	2,792	3,655	3,761
Cost of materials.....\$	4,832,333,356	6,843,231,064	9,380,558,682	12,705,070,820	13,127,707,970
Av. per establishment.....\$	169,657	191,194	246,163	346,357	404,989
Av. per employee.....\$	3,952	5,843	7,067	9,814	10,377
Value added by manufacture ²\$	4,015,776,010	5,830,566,434	7,993,069,351	10,533,208,994	10,682,137,680
Av. per establishment ²\$	140,989	148,932	209,753	287,149	329,543
Av. per employee ²\$	3,284	4,551	6,021	8,136	8,444
Gross value of products.....\$	9,073,692,519	12,479,593,300	17,785,416,854 ⁵	23,747,457,083 ⁵	24,243,294,949 ⁵
Av. per establishment.....\$	318,565	348,670	466,723	647,387	797,904
Av. per employee.....\$	7,420	10,655	13,398	18,343	19,164

¹ A change in the method of computing the number of production workers in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. There was therefore a proportionate reduction in the averages for 1925-30 per employee as compared with what these averages would have been under the other method. In 1931, however, the method in force prior to 1925 was re-adopted. The figures for 1931 and later years are therefore comparable with those for 1924 and earlier years.

² Net value of products; see footnote 1, Table 1, p. 646. ³ Based on the revised Standard Industrial Classification; see text on p. 651.

⁴ Not strictly comparable with previous years; see third paragraph, p. 645. ⁵ In 1952 gross value of products was replaced by value of factory shipments; see text on p. 645.

Value and Volume of Manufactured Production.—In the interpretation of manufacturing values over a number of years, variations in the level of prices must be borne in mind. In recent years, owing to great changes in prices, unadjusted value series used in

isolation have become increasingly inadequate as indicators of economic trends. Consequently, interest has shifted to measures of volume. The range of prices since 1917, on the base period 1935-39=100, was as follows:—

Year	General Wholesale Price Index	Price Index of Fully and Chiefly Manufactured Products	Year	General Wholesale Price Index	Price Index of Fully and Chiefly Manufactured Products
1917.....	148.9	150.9	1949.....	198.3	199.2
1920.....	203.2	208.2	1953.....	220.7	228.8
1929.....	124.6	123.7	1957.....	227.4	237.9
1933.....	87.4	93.3	1958.....	227.8	238.3
1939.....	99.2	101.9	1959.....	230.6	241.6
1944.....	130.6	129.1	1960.....	230.9	242.2
1946.....	138.9	138.0	1961.....	233.3	244.5

Real income is ultimately measured in goods and services so that the growth of the volume of manufacturing production, as distinguished from its value, becomes a matter of great significance. The important thing to know is whether consumers are getting more goods and services and not whether they are expending more dollars and cents.

The Dominion Bureau of Statistics has published an index of industrial production* since 1926, which through the years has been subjected to several major revisions. The latest reconstruction was made possible by the availability of a great deal of basic data. Annual statistics valuable for this project have been collected by the Bureau from the end of World War I to the present and the scope of the monthly information has been greatly expanded. Applying methods developed through the experience of the past quarter-century, it has been possible to compute an index with a fair measure of accuracy from 1935 to the present.

The manufacturing sector is divided at the major group level into durable manufactures and non-durable manufactures. The movement of durable goods normally varies from that of non-durables; there tends to be greater fluctuation in durables from prosperity to depression and the demand for non-durables is more constant.

Table 4 shows the fluctuations in the volume indexes of durable, non-durable and total manufactured goods produced during the years 1946-60, and Tables 5 and 6 show the fluctuations in the groups comprised within the durable and non-durable classifications during the same period.

* For a description of the methods used in constructing the index and a description of its scope, see DBS publication *Revised Index of Industrial Production, 1935-1957* (Catalogue No. 61-502).

4.—Indexes of the Total Volume of Manufactured Production classified on the Basis of Durable and Non-durable Goods, 1946-60 (1949=100)

NOTE.—Indexes for the years 1935-45 are given in the 1961 Year Book, p. 637.

Year	Durable Manu- factures	Non- durable Manu- factures	All Manu- factures	Year	Durable Manu- factures	Non- durable Manu- factures	All Manu- factures
1946.....	79.9	89.8	85.2	1954.....	124.8	121.2	122.9
1947.....	93.3	93.2	93.2	1955.....	139.7	130.4	134.7
1948.....	98.4	96.3	97.3	1956.....	153.3	138.1	145.1
1949.....	100.0	100.0	100.0	1957.....	146.7	139.7	142.9
1950.....	106.5	106.0	106.2	1958.....	138.6	139.5	139.1
1951.....	119.9	115.8	115.0	1959.....	149.5	150.1	149.8
1952.....	124.8	113.2	118.5	1960.....	146.4	151.8	149.3
1953.....	133.6	120.2	126.4				

5.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Durable Manufactures Classification, 1946-60

(1949=100)

NOTE.—Indexes for the years 1935-45 are given in the 1961 Year Book, p. 638.

Year	Wood Products	Iron and Steel Products	Transportation Equipment	Non-ferrous Metal Products	Electrical Apparatus and Supplies	Non-metallic Mineral Products
1946.....	86.8	80.8	80.6	81.8	67.7	72.0
1947.....	98.2	93.6	95.3	89.6	89.6	86.3
1948.....	100.6	101.5	97.2	99.2	91.5	92.2
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	108.2	102.5	108.3	104.0	112.5	111.0
1951.....	114.8	117.0	131.3	114.1	120.7	119.8
1952.....	115.8	118.9	149.1	112.2	124.5	122.8
1953.....	125.4	115.3	165.2	120.1	150.9	139.2
1954.....	124.2	106.2	137.3	117.0	151.7	146.1
1955.....	136.4	123.8	145.1	127.5	176.2	171.1
1956.....	138.3	145.3	157.9	133.0	191.3	191.5
1957.....	127.3	139.6	151.2	127.6	183.6	191.3
1958.....	131.1	126.4	130.8	125.8	175.5	205.9
1959.....	136.6	147.2	131.5	134.7	184.8	223.2
1960.....	136.0	137.3	130.0	148.3	180.2	210.9

6.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1946-60

(1949=100)

NOTE.—Indexes for the years 1935-45 are given in the 1961 Year Book, pp. 639-640.

Year	Foods	Beverages	Tobacco and Tobacco Products	Rubber Products	Leather Products	Textile Products (except clothing)
1946.....	103.0	82.2	90.6	89.5	124.0	88.7
1947.....	100.4	87.3	93.4	127.4	109.1	94.0
1948.....	99.5	95.3	93.4	116.4	95.5	97.3
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	104.4	102.1	103.4	116.8	95.6	112.5
1951.....	107.0	106.2	95.0	124.9	90.4	113.1
1952.....	112.8	115.5	108.0	118.9	101.0	102.9
1953.....	115.1	124.6	120.3	130.3	106.4	107.9
1954.....	120.2	121.7	124.7	119.2	100.2	94.3
1955.....	125.6	130.6	135.5	141.0	106.9	114.0
1956.....	131.4	138.4	145.9	154.0	115.6	117.3
1957.....	133.2	143.2	161.0	147.8	115.6	117.6
1958.....	139.0	144.7	173.2	137.2	114.4	109.5
1959.....	145.0	155.8	179.9	161.1	120.3	124.4
1960.....	147.1	160.2	182.0	143.3	111.8	122.5

6.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1946-60—concluded

Year	Clothing (textile and fur)	Paper Products	Printing, Publishing and Allied Industries	Products of Petroleum and Coal	Chemicals and Allied Products	Miscel- laneous Industries
1946.....	95.3	81.0	76.9	74.3	87.0	80.2
1947.....	92.2	89.1	83.6	79.8	90.8	84.1
1948.....	97.6	94.9	92.6	89.9	95.7	81.4
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	101.3	109.3	101.5	111.9	107.7	104.8
1951.....	101.2	117.5	105.1	128.5	120.0	119.0
1952.....	111.4	113.4	107.5	140.1	122.3	121.8
1953.....	115.0	118.1	114.7	153.5	139.9	141.1
1954.....	108.9	124.1	121.6	165.0	152.1	134.3
1955.....	112.8	131.0	127.1	188.3	165.5	136.4
1956.....	117.6	137.8	137.3	216.1	174.8	147.0
1957.....	116.8	135.5	138.2	223.5	183.4	153.3
1958.....	114.4	138.4	134.4	216.8	186.5	160.0
1959.....	113.1	144.7	143.2	241.5	208.4	153.2
1960.....	107.9	148.4	146.5	250.6	219.7	191.6

Section 2.—Manufactured Production Variouslly Classified

Beginning with the publication of 1960 statistics of manufacturing, industries and groups of industries follow the revised Standard Industrial Classification,* which has been established to take into account the changes in the structure of Canadian industry that have occurred during the past decade. In the past, commodity terms have been used in describing industries, so that the tables in previous editions of the Year Book (and in certain tables of this volume which have not yet been brought into line) contain industry titles such as pulp and paper, petroleum products, aircraft and parts, etc. In revising the Standard Industrial Classification, it was considered advisable to assign to each industry its most descriptive title, a title to be used whenever the industry was mentioned. Some industries are associated with particular processes (such as knitting mills and foundries) and others have traditional titles (such as machine shops and commercial printing). Some are best described in terms of the principal commodities they produce and it is necessary to distinguish these manufacturing industries from industries engaged in wholesale trade or retail trade in the same commodities. Therefore, many new titles of manufacturing industries contain such terms as "manufacturers", "industry", "plants", "mills" and "factories". These terms are applied, as far as possible, according to the usage in the industries concerned because it was felt that this terminology would be widely understood and clarity is more desirable than consistency in industry titles.

Subsection 1.—Manufactures classified by Industrial Groups and Individual Industries

The tables of this Subsection give detailed statistics showing the trends of production by industrial groups and individual industries. Table 7 gives summary statistics for the industrial groups for the period 1957-61; the figures for 1961 are not strictly comparable with those of the previous years because of a change in the definition of "establishment" (see also p. 645). Table 8 contains details of establishments, employment and output for the individual industries within the major groups for 1961; Table 9 lists the forty leading industries in 1961, ranked according to selling value of factory shipments; and Table 10 gives quantities and values of principal commodities produced in 1960—figures for 1961 were not available at the time of going to press.

* DBS publication *Standard Industrial Classification Manual* (Catalogue No. 12-501).

7.—Summary Statistics of Manufactures, by Industrial Group, 1957-61

NOTE.—Based on the revised Standard Industrial Classification; see text on p. 651.

Industrial Group and Year	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Foods and Beverages—						
1957.....	8,518	192,443	592,068,171	2,752,710,942	1,408,721,142	4,229,105,615
1958.....	8,401	190,766	625,386,856	2,982,311,034	1,543,190,009	4,578,800,692
1959.....	8,150	192,396	664,835,670	3,012,334,446	1,628,418,783	4,728,164,094
1960 ²	8,488	198,611	700,983,814	3,118,200,331	1,704,539,866	4,880,293,652
1961 ³	7,444	188,855	687,995,973	3,148,673,188	1,704,714,596	4,905,434,328
Tobacco Products—						
1957.....	49	9,905	33,322,821	160,710,422	88,179,320	249,734,356
1958.....	40	10,319	37,143,602	206,043,534	98,600,156	305,138,636
1959.....	40	10,287	38,078,218	212,770,678	111,219,179	324,563,661
1960.....	40	9,731	38,354,483	216,354,230	117,789,866	334,413,635
1961 ³	38	9,442	39,153,878	205,297,105	128,639,932	334,983,236
Rubber—						
1957.....	90	22,186	83,219,238	144,271,902	176,947,370	326,182,742
1958.....	91	19,951	76,469,794	128,619,194	174,884,099	308,488,244
1959.....	90	21,101	86,894,694	160,441,694	188,249,480	347,798,004
1960.....	92	20,311	84,525,519	152,660,298	168,965,070	323,053,118
1961 ³	93	18,860	82,003,785	148,683,954	171,593,527	331,134,713
Leather—						
1957.....	641	31,810	79,415,508	124,774,575	116,581,669	243,747,757
1958.....	619	30,981	80,878,173	127,543,441	122,908,431	253,536,245
1959.....	600	31,601	84,066,826	145,912,239	132,051,503	275,622,759
1960.....	608	30,424	83,918,955	134,436,607	130,595,924	268,114,309
1961 ³	555	31,413	89,574,243	151,406,469	140,387,914	291,068,523
Textiles—						
1957.....	936	68,315	200,794,739	411,453,084	318,824,667	745,645,396
1958.....	909	63,265	192,526,181	396,711,987	322,472,570	740,058,566
1959.....	889	63,524	202,525,667	432,984,882	362,516,410	804,261,185
1960.....	924	61,756	206,500,220	430,561,782	368,610,350	810,522,933
1961 ³	883	62,544	212,557,789	468,001,049	392,688,681	875,287,700
Knitting Mills—						
1957.....	310	21,661	50,216,758	88,782,158	81,413,897	172,161,757
1958.....	321	20,936	49,829,169	88,610,388	83,974,838	173,576,575
1959.....	319	20,992	52,187,295	98,658,641	90,748,070	189,267,687
1960.....	362	20,765	54,050,926	104,085,566	93,359,607	198,159,994
1961 ³	358	21,459	57,469,382	117,361,967	100,641,407	219,295,978
Clothing—						
1957.....	2,533	89,991	215,046,237	396,967,365	342,639,068	742,845,440
1958.....	2,446	86,768	214,888,038	388,093,909	350,135,455	742,185,179
1959.....	2,344	86,659	224,040,281	399,842,421	362,010,983	759,219,309
1960.....	2,391	86,875	227,213,881	402,732,198	369,365,614	770,468,489
1961 ³	2,307	87,728	234,388,479	427,523,380	377,072,432	801,535,491
Wood—						
1957.....	8,736	92,896	267,101,547	569,064,408	426,585,067	1,011,994,598
1958.....	7,939	88,103	267,793,928	558,286,107	442,214,723	1,017,689,686
1959.....	7,835	90,018	277,560,778	590,818,752	472,692,258	1,079,259,366
1960.....	7,490	85,262	283,521,417	598,131,213	454,978,488	1,068,041,627
1961 ³	5,251	80,042	280,330,704	584,792,751	431,372,733	1,035,343,618
Furniture and Fixtures—						
1957.....	2,010	34,028	101,218,122	157,532,471	159,084,872	320,395,746
1958.....	1,859	32,812	101,069,479	155,669,395	163,648,782	322,851,798
1959.....	1,925	33,803	110,086,601	168,063,646	175,327,924	344,422,717
1960.....	2,099	34,206	112,660,387	166,268,761	178,493,573	347,980,824
1961 ³	2,089	33,153	112,445,673	174,635,120	185,102,995	362,062,105
Paper and Allied Industries—						
1957.....	587	95,250	406,633,191	896,693,803	874,349,535	1,884,235,849
1958.....	563	93,443	411,614,113	891,897,757	914,801,141	1,902,602,012
1959.....	561	94,664	432,408,982	943,265,277	982,823,273	2,037,551,878
1960.....	581	95,433	458,624,265	979,872,639	1,035,904,372	2,128,107,197
1961 ³	569	94,862	471,137,165	1,021,502,882	1,071,316,186	2,205,734,055

For footnotes, see end of table, p. 653.

7.—Summary Statistics of Manufactures, by Industrial Group, 1957-61—concluded

Industrial Group and Year	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Printing, Publishing and Allied Industries—						
1957.....	3,354	72,243	269,475,421	228,778,515	473,140,522	707,759,185
1958.....	3,272	70,677	284,473,776	237,188,035	504,292,221	746,227,780
1959.....	3,314	72,551	305,140,444	256,530,790	550,657,425	808,639,939
1960.....	3,462	73,694	322,788,021	274,846,086	586,142,192	865,930,729
1961 ³	3,428	72,779	327,900,870	275,716,714	591,099,208	872,292,337
Primary Metal—						
1957.....	431	92,894	417,080,485	1,424,711,562	990,448,242	2,511,312,371
1958.....	416	82,835	387,729,188	1,251,845,721	980,229,624	2,220,599,924
1959.....	411	88,817	436,277,440	1,499,019,794	1,035,078,014	2,610,650,087
1960.....	418	90,025	454,582,536	1,598,265,430	1,047,115,445	2,742,520,081
1961 ³	410	87,238	457,619,351	1,591,688,041	1,129,978,204	2,806,483,787
Metal Fabricating (except machinery and transportation equipment)—						
1957.....	2,457	100,849	393,967,825	629,122,764	679,437,957	1,326,743,944
1958.....	2,626	93,995	380,749,200	607,337,310	671,465,537	1,298,538,620
1959.....	2,613	98,824	418,305,886	675,064,982	735,957,120	1,415,334,196
1960.....	2,896	98,505	428,738,381	662,679,077	750,664,816	1,432,904,803
1961 ³	2,859	94,611	421,915,944	734,400,126	739,018,830	1,492,690,845
Machinery (except electrical)—						
1957.....	494	46,053	181,098,852	267,315,662	331,400,658	604,782,974
1958.....	523	41,348	173,722,971	258,642,207	285,603,102	554,564,798
1959.....	521	45,264	201,066,136	302,870,740	340,390,761	626,103,977
1960.....	533	43,495	199,427,682	299,071,885	329,763,223	642,458,967
1961 ³	546	42,083	195,606,445	303,943,943	329,763,583	639,739,426
Transportation Equipment—						
1957.....	620	144,753	591,941,950	1,295,771,026	959,489,205	2,227,818,862
1958.....	621	126,121	554,193,448	1,161,487,548	883,763,897	2,085,796,821
1959.....	640	113,583	531,689,833	1,215,799,941	911,812,139	2,028,871,429
1960.....	687	109,417	518,352,786	1,096,084,723	871,734,759	2,060,689,246
1961 ³	671	107,709	522,470,847	1,130,170,158	828,669,699	1,960,777,154
Electrical Products—						
1957.....	513	90,092	351,612,415	558,106,167	623,144,136	1,192,332,448
1958.....	512	82,445	343,434,579	535,054,177	572,304,656	1,121,892,189
1959.....	522	81,727	347,088,588	568,226,899	617,677,328	1,169,628,062
1960.....	548	78,648	348,588,227	545,995,616	624,619,582	1,175,966,233
1961 ³	531	79,531	353,668,079	585,351,554	617,534,041	1,205,534,321
Non-metallic Mineral Products—						
1957.....	1,204	39,098	146,249,313	205,237,469	325,133,046	581,535,118
1958.....	1,221	39,844	157,759,293	213,561,937	355,542,551	614,809,840
1959.....	1,225	42,365	174,491,705	236,584,159	390,618,532	672,351,110
1960.....	1,331	41,606	173,438,100	230,750,338	373,070,496	647,461,580
1961 ³	1,292	40,128	174,087,186	250,116,408	381,393,965	675,012,816
Petroleum and Coal Products—						
1957.....	85	15,617	78,799,697	841,059,891	505,597,526	1,401,777,040*
1958.....	96	16,316	85,551,656	839,526,042	478,508,373	1,385,215,080*
1959.....	88	14,661	82,995,439	870,753,290	245,631,947	1,164,297,008*
1960.....	96	14,513	85,446,911	873,633,610	279,705,068	1,197,967,758*
1961 ³	91	14,053	85,339,864	920,630,338	290,698,500	1,220,193,764
Chemicals and Chemical Products—						
1957.....	1,123	53,986	218,998,357	512,831,179	585,779,852	1,139,898,207
1958.....	1,125	53,852	230,685,526	540,932,720	656,321,752	1,235,704,792
1959.....	1,123	53,995	239,748,172	577,665,923	689,707,619	1,316,356,806
1960.....	1,143	54,269	253,201,119	582,843,034	747,753,234	1,373,466,548
1961 ³	1,072	52,167	254,004,293	623,943,855	760,927,799	1,433,878,158
Miscellaneous Manufacturing Industries—						
1957.....	1,887	41,243	130,957,754	180,169,568	235,453,772	420,897,680
1958.....	1,901	41,981	140,203,712	201,193,985	252,880,696	456,183,391
1959.....	1,865	43,983	153,255,960	219,255,257	322,783,489	501,845,337
1960.....	2,493	47,083	172,219,763	237,597,396	300,043,449	538,935,510
1961 ³	1,928	46,375	171,877,519	263,868,914	309,523,448	674,812,594

¹ See footnote 1, Table 1.² See footnote 6, Table 1.³ Not strictly comparable with previous

years; see third paragraph, p. 645.

⁴ Figures for 1959 and later are not comparable with those of 1957 and 1958 because of a change in the method of valuation for products in the petroleum refining industry; on the revised basis, figures for 1957 and 1958 would be about \$268,000,000 lower.

8.—Principal Statistics of Individual Manufacturing Industries, 1961

NOTE.—Based on revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph, p. 645).

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Foods and Beverages.....	7,444	188,855	687,995,973	3,148,673,188	1,704,714,596	4,905,434,328
Meat Products—						
Slaughtering and meat packing plants.....	242	25,075	112,925,245	893,822,118	182,740,227	1,080,913,148
Animal oils and fats plants....	17	451	1,856,806	4,187,020	5,321,865	9,862,305
Sausage and sausage casing manufacturers.....	85	1,578	5,626,637	22,020,687	11,854,110	34,134,370
Dairy Products—						
Butter and cheese plants.....	914	7,493	22,034,156	273,893,861	44,447,434	323,899,706
Pasteurizing plants.....	732	21,678	84,355,529	267,020,276	136,176,755	411,616,839
Condenseries.....	23	1,128	4,188,648	58,297,103	18,998,801	77,086,280
Ice cream manufacturers.....	41	1,463	5,567,272	19,213,047	12,216,409	32,165,940
Process cheese manufacturers....	10	1,095	5,114,520	28,632,088	18,129,270	46,736,373
Fish products.....	340	13,542	30,433,891	110,691,831	59,475,093	169,825,334
Fruit and vegetable canners and preservers.....	335	16,467	49,451,789	198,676,777	131,226,180	328,098,257
Grain Mills—						
Feed manufacturers.....	958	7,039	24,512,868	225,930,728	59,617,185	289,660,603
Flour mills.....	54	3,964	16,921,164	173,682,471	45,274,550	220,586,667
Breakfast cereal manufacturers	19	1,471	6,629,585	15,650,720	23,632,380	40,036,251
Bakery Products—						
Biscuit manufacturers.....	48	5,945	18,314,735	42,221,627	44,616,114	87,647,846
Bakeries.....	2,529	35,637	115,753,102	164,609,027	194,337,555	369,637,256
Confectionery manufacturers.....	194	9,155	28,088,517	71,244,799	68,266,277	140,537,003
Sugar refineries.....	11	3,046	13,770,344	86,345,969	41,385,699	133,453,375
Vegetable oil mills.....	12	537	2,576,424	53,983,095	8,724,504	62,674,794
Macaroni manufacturers.....	18	856	2,603,012	10,027,078	8,672,786	18,800,089
Miscellaneous food manufacturers	267	10,922	43,094,491	252,773,582	152,206,365	408,178,870
Beverage Manufacturers—						
Soft drink manufacturers.....	502	7,840	29,765,769	52,871,111	116,068,270	172,647,090
Distilleries.....	19	4,323	21,001,287	55,038,271	113,895,198	169,207,919
Breweries.....	54	7,623	40,881,549	59,061,535	197,398,696	259,438,200
Wineries.....	20	527	2,528,633	8,778,357	9,952,873	18,589,810
Tobacco Products.....	38	9,442	39,153,878	205,297,105	128,639,932	334,983,236
Leaf tobacco processing.....	16	1,625	5,222,569	82,821,722	21,176,148	105,026,789
Tobacco products manufacturers	22	7,817	33,931,309	122,475,383	107,463,784	229,956,447
Rubber.....	93	18,860	82,003,785	148,683,954	171,593,527	331,134,713
Rubber footwear manufacturers....	6	4,023	12,669,668	12,445,572	19,462,576	32,578,663
Rubber tire and tube manufac- turers.....	10	7,502	38,013,950	87,174,440	84,855,754	180,248,120
Other rubber.....	77	7,335	31,320,167	49,063,942	67,275,197	118,307,930
Leather.....	555	31,413	89,574,243	151,406,469	140,387,914	291,068,523
Leather tanneries.....	44	3,538	13,572,364	38,364,107	19,495,638	57,862,467
Shoe factories.....	237	20,866	57,099,576	83,970,518	89,563,348	173,123,850
Leather glove factories.....	56	1,362	3,469,693	5,199,005	5,343,728	10,483,875
Boot and shoe findings manufac- turers.....	37	1,276	3,569,031	6,214,913	5,984,944	12,303,921
Miscellaneous leather products manufacturers.....	181	4,371	11,863,579	17,657,926	20,000,256	37,294,402
Textiles.....	883	62,544	212,557,789	468,001,049	392,688,681	875,287,700
Cotton yarn and cloth mills.....	29	17,384	55,799,803	136,226,684	96,215,791	236,711,105
Wool yarn mills.....	26	1,927	5,694,926	14,165,175	9,422,042	24,030,189
Wool cloth mills.....	55	6,085	19,475,129	36,227,424	32,349,600	68,443,002
Synthetic textile mills.....	56	15,849	59,392,697	118,305,942	123,477,735	248,717,677
Fibre preparing mills.....	30	852	3,160,245	8,813,015	5,506,053	14,840,990
Thread mills.....	16	1,182	3,710,284	9,414,388	6,963,656	16,019,744
Cordage and twine industry.....	15	953	3,667,342	10,294,998	6,285,327	16,671,720
Narrow fabric mills.....	47	2,135	6,484,576	10,928,663	12,589,364	23,539,309
Pressed and punched felt mills....	10	417	1,636,456	3,668,744	2,998,324	6,812,549
Carpet, mat and rug industry....	15	1,736	5,939,384	17,606,656	11,441,745	29,314,331
Textile dyeing and finishing plants.....	54	1,969	7,299,520	5,614,268	12,025,785	18,520,424
Linoleum and coated fabrics industry.....	16	2,309	10,785,879	19,038,826	17,226,358	36,967,315

8.—Principal Statistics of Individual Manufacturing Industries, 1961—continued

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Textiles—concluded						
Canvas products industry.....	132	1,689	4,822,789	9,494,965	8,221,104	17,952,327
Cotton and jute bag industry...	29	1,024	3,248,598	21,889,524	6,604,607	28,670,018
Miscellaneous Textiles—						
Automobile fabric accessory manufacturers.....	26	850	2,893,150	7,878,389	5,333,889	13,190,549
Embroidery, pleating, hem- stitching manufacturers.....	130	1,538	4,169,233	2,256,775	6,303,209	8,625,459
Miscellaneous textiles <i>n.e.s.</i> industry.....	187	4,645	14,377,778	36,176,613	29,924,092	66,261,092
Knitting Mills	358	21,459	57,469,382	117,361,967	100,641,407	219,295,978
Hosiery mills.....	166	8,277	22,247,770	35,414,920	40,497,514	75,679,385
Other knitting mills.....	192	13,182	35,221,612	81,947,047	60,143,893	143,616,593
Clothing	2,307	87,725	234,388,479	427,523,380	377,072,432	801,535,491
Men's clothing factories.....	488	29,368	80,224,956	157,760,437	123,614,414	279,088,853
Men's clothing contractors.....	126	5,471	11,116,056	1,498,798	13,715,046	15,344,832
Women's clothing factories.....	633	25,927	74,488,289	151,134,488	127,738,427	277,477,796
Women's clothing contractors.....	184	5,476	10,383,843	1,078,672	12,968,477	14,261,384
Children's clothing industry.....	182	8,149	18,877,284	43,224,615	30,329,875	73,256,354
Fur goods industry.....	444	3,676	13,731,083	36,980,703	22,550,634	59,553,536
Hat and cap industry.....	130	3,950	11,218,363	13,266,512	17,585,349	31,475,380
Foundation garment industry.....	42	3,913	9,902,654	14,807,384	20,823,773	35,841,568
Fabric glove manufacturers.....	13	757	1,674,654	2,945,141	2,813,493	5,733,223
Miscellaneous clothing <i>n.e.s.</i> in- dustry.....	55	1,041	2,771,297	4,876,630	4,632,944	9,502,565
Wood	5,251	80,042	280,330,704	584,792,751	431,372,733	1,035,343,618
Sawmills.....	3,260	41,134	144,699,686	306,238,148	218,227,808	534,590,574
Shingle mills.....	53	1,396	6,168,320	8,217,324	7,816,284	16,328,748
Veneer and plywood mills.....	75	11,109	42,383,394	79,157,716	60,284,921	143,718,667
Sash and door and planing mills (excl. hardwood flooring).....	1,356	16,175	54,858,138	138,583,139	93,688,651	235,160,488
Hardwood flooring.....	19	1,208	3,629,570	7,849,345	5,976,681	13,997,256
Wooden box factories.....	160	2,802	8,042,831	10,074,770	11,874,774	22,324,470
Coffin and casket industry.....	64	1,350	4,171,999	4,907,448	6,643,398	11,738,038
Miscellaneous Wood—						
Wood handles and turning.....	60	1,227	3,415,580	4,239,095	4,429,140	9,232,783
Woodenware.....	25	481	1,205,996	1,660,450	1,802,367	3,537,440
Cooperage.....	33	482	1,521,987	3,170,418	1,949,390	5,207,005
Miscellaneous wood industries <i>n.e.s.</i> (incl. wood preserva- tion).....	146	2,678	10,233,209	20,694,898	18,679,319	39,508,149
Furniture and Fixtures	2,089	33,153	112,445,673	174,635,120	185,102,995	362,062,105
Household furniture industry.....	1,580	19,936	66,149,253	100,008,167	104,219,277	205,596,993
Office furniture industry.....	44	2,853	10,703,442	11,989,391	17,638,038	29,985,050
Other furniture industries.....	403	9,169	32,361,837	55,657,664	57,460,141	113,667,410
Electric lamp and shade industry	62	1,195	3,231,141	6,979,898	5,785,539	12,812,652
Paper and Allied Industries	569	94,862	471,137,165	1,021,502,882	1,071,316,186	2,205,734,055
Pulp and paper mills.....	125	65,799	355,171,090	680,167,806	842,419,885	1,634,606,001
Asphalt roofing manufacturers..	19	1,886	8,670,520	22,585,758	19,589,356	42,162,355
Folding box and set-up box manu- facturers.....	133	7,520	28,360,323	65,262,823	48,357,707	113,435,640
Corrugated box manufacturers..	40	6,274	26,597,373	96,084,552	49,966,157	147,063,338
Paper bag manufacturers.....	62	3,642	12,841,221	54,252,776	28,710,862	82,577,016
Other paper converters.....	190	9,741	39,496,668	103,149,167	82,272,219	185,889,705
Printing, Publishing and Allied Industries	3,428	72,779	327,900,870	275,716,714	591,099,208	872,292,337
Commercial Printing—						
Printing and bookbinding.....	1,688	21,892	87,931,318	82,874,305	146,131,269	230,144,643
Lithographing.....	326	10,282	45,943,024	59,748,348	79,907,537	140,327,433
Engraving, Stereotyping and Allied Industries—						
Engraving and duplicate plates	171	4,102	22,477,676	8,466,835	33,245,787	42,203,290
Trade composition or typeset- ting.....	57	1,187	6,427,590	562,165	9,243,568	9,870,910
Publishing only.....	434	4,035	17,253,249	29,752,903	49,650,899	79,418,346
Printing and publishing.....	752	31,281	147,868,015	94,312,158	272,920,148	370,327,715

8.—Principal Statistics of Individual Manufacturing Industries, 1961—continued

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Primary Metal	410	87,238	457,619,351	1,591,688,041	1,129,978,204	2,806,483,787
Iron and steel mills.....	42	34,546	193,111,898	351,346,159	411,494,397	789,271,070
Steel pipe and tube mills.....	18	3,233	17,805,632	101,731,357	47,808,496	154,868,399
Iron foundries.....	140	8,172	34,453,040	36,665,002	54,326,889	94,624,917
Smelting and refining.....	24	29,290	155,948,335	891,950,994	530,096,705	1,471,048,021 ¹
Aluminum rolling, casting and ex- truding.....	43	5,893	28,536,066	76,751,221	34,111,024	110,455,977
Copper and alloy rolling, casting and extruding.....	69	3,441	16,473,716	92,138,052	29,510,373	122,307,936
Metal rolling, casting and extrud- ing, <i>n.e.s.</i>	74	2,663	11,290,664	41,105,256	22,630,320	63,907,467
Metal Fabricating (except ma- chinery and transportation equipment)	2,859	94,611	421,915,944	734,400,126	739,018,830	1,492,690,845
Boiler and plate works.....	68	4,511	20,061,851	36,078,235	31,350,617	69,011,468
Fabricated structural metal in- dustry.....	78	13,789	68,409,532	112,014,777	96,029,106	210,061,203 ¹
Ornamental and architectural metal industry.....	549	9,505	38,845,933	61,140,812	70,083,618	132,229,591
Metal stamping, pressing and coating industry.....	436	18,584	84,975,289	203,300,028	168,578,452	374,352,563
Wire and wire products manufac- turers.....	199	11,995	56,858,603	125,325,503	91,685,773	220,701,880
Hardware, tool and cutlery man- ufacturers.....	308	8,551	36,269,458	36,802,171	74,368,059	111,427,554
Heating equipment manufactur- ers.....	112	4,933	21,011,928	35,274,524	42,259,119	78,487,572
Machine shops.....	778	8,144	32,915,367	29,177,808	47,155,739	77,441,566
Miscellaneous metal fabricating industries.....	331	14,599	62,567,983	95,286,258	117,508,347	218,977,448
Machinery (except electrical ma- chinery)	546	42,083	195,606,445	303,943,943	329,763,553	639,739,426
Agricultural implement industry.....	67	10,487	49,538,608	73,947,376	60,092,972	138,044,910
Miscellaneous machinery and equipment manufacturers.....	420	26,610	122,746,209	178,603,989	208,462,946	390,689,239
Commercial refrigeration and air conditioning equipment manuf- acturers.....	34	1,554	6,729,835	10,138,479	12,707,870	23,181,886
Office and store machinery man- ufacturers.....	25	3,432	16,591,793	41,254,099	48,499,795	87,823,391
Transportation Equipment	671	107,709	522,470,347	1,130,170,158	828,669,699	1,960,777,154
Aircraft and parts manufacturers.....	80	28,386	141,930,122	157,845,455	192,094,988	348,245,173 ¹
Motor vehicle manufacturers.....	17	21,673	120,938,517	603,349,583	277,150,529	870,942,359
Truck body and trailer manu- facturers.....	112	3,369	13,291,847	25,839,904	21,835,815	48,090,709
Motor vehicle parts and accesso- ries manufacturers.....	126	20,820	103,001,867	185,994,866	160,762,326	352,778,908
Railway rolling-stock industry.....	29	16,529	72,705,929	99,139,009	78,737,715	182,569,012 ¹
Shipbuilding and repair.....	63	14,848	63,777,724	48,136,186	86,668,409	136,629,459 ¹
Boatbuilding and repair.....	232	1,483	4,636,876	5,643,727	6,569,834	12,626,110
Miscellaneous vehicle manufac- turers.....	12	601	2,187,469	4,221,428	4,860,083	8,895,424
Electrical Products	531	79,531	353,568,079	585,351,554	617,534,041	1,205,534,321
Small electrical appliances, man- ufacturers of.....	58	3,727	14,897,435	31,201,286	33,275,218	64,894,043
Major appliances (electric and non-electric), manufacturers of.....	48	11,084	46,861,875	109,910,325	92,496,459	206,212,477
Household radio and television receivers, manufacturers of.....	23	6,264	27,148,260	71,894,285	44,322,797	118,553,445
Communications equipment manufacturers.....	125	24,567	109,658,552	93,749,901	163,288,472	251,084,190
Electrical industrial equipment, manufacturers of.....	97	16,404	80,945,438	86,811,512	129,314,600	218,881,168
Battery manufacturers.....	27	2,019	9,051,836	20,385,132	19,147,198	40,048,638
Electric wire and cable, manu- facturers of.....	25	6,348	30,466,985	103,353,297	62,185,216	162,601,505
Miscellaneous electrical products, manufacturers of.....	133	9,118	34,537,698	68,045,816	73,504,081	143,288,855

¹ Reported on a production basis.

8.—Principal Statistics of Individual Manufacturing Industries, 1961—continued

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Non-metallic Mineral Products.	1,292	40,128	174,087,186	250,116,408	381,393,965	675,012,816
Cement manufacturers.....	20	3,113	16,697,185	14,358,880	76,422,986	107,246,086
Lime manufacturers.....	21	825	3,569,549	1,784,960	8,954,831	12,989,077
Gypsum products manufacturers	14	1,600	7,186,288	14,318,154	18,712,604	34,343,004
Concrete products manufacturers	616	8,339	31,459,954	44,445,312	65,266,932	111,871,135
Ready-mix concrete manufactur- ers.....	157	4,071	19,334,319	66,200,775	35,779,286	105,340,562
Clay Products Manufacturers—						
Clay products (from domestic clays).....	98	3,547	13,537,964	4,733,718	24,182,091	35,169,009
Clay products (from imported clays).....	28	1,628	6,778,260	5,662,132	12,925,011	19,362,713
Refractories manufacturers.....	16	670	3,008,541	8,752,337	8,785,440	17,884,741
Stone products manufacturers...	134	1,095	3,929,096	4,404,317	6,924,410	11,557,346
Mineral wool manufacturers.....	9	971	4,877,058	5,782,258	9,459,267	16,117,789
Asbestos products manufacturers	15	2,101	10,135,775	13,850,375	20,853,977	35,735,016
Glass manufacturers.....	12	6,714	28,215,533	21,098,981	44,338,779	68,110,652
Glass products manufacturers...	97	2,660	11,325,230	22,401,885	22,082,121	45,043,541
Abrasives manufacturers.....	20	2,315	11,799,317	16,642,693	21,479,927	42,942,366
Other non-metallic mineral prod- ucts.....	35	479	2,233,117	5,679,631	5,226,303	11,299,779
Petroleum and Coal Products...	91	14,053	85,339,864	920,630,338	290,698,500	1,220,193,764
Petroleum Refineries—						
Petroleum refining.....	44	13,235	81,516,036	899,836,714	276,271,921	1,184,176,374
Lubricating oils and greases, manufacturers of.....	13	276	1,323,965	11,807,241	5,519,514	17,452,028
Other petroleum and coal prod- ucts.....	34	542	2,499,863	8,986,383	8,907,065	18,565,362
Chemicals and Chemical Products.....	1,072	52,167	254,004,293	623,943,855	760,927,799	1,433,878,158
Explosives and ammunition man- ufacturers.....	14	4,660	22,292,149	25,586,162	31,863,783	63,353,335
Mixed fertilizers, manufacturers of.....	43	1,378	6,602,443	39,647,614	14,426,263	54,261,404
Plastics and synthetic resins, manufacturers of.....	31	3,325	18,506,962	60,258,949	47,103,780	110,345,093
Pharmaceuticals and medicines, manufacturers of.....	175	7,602	31,744,258	49,784,714	117,204,902	166,015,641
Paint and varnish manufacturers	136	5,802	25,348,379	75,065,600	76,955,820	152,357,549
Soap and cleaning compounds, manufacturers of.....	126	4,145	21,859,028	82,893,226	86,698,652	172,334,470
Toilet preparations, manufactur- ers of.....	73	2,646	9,613,301	22,949,180	45,555,113	68,814,340
Industrial chemicals, manufac- turers of.....	128	16,191	89,264,320	182,032,101	257,622,238	476,603,231
Printing inks, manufacturers of...	32	971	4,622,088	8,362,203	10,667,225	19,074,459
Other chemical industries, <i>n.e.s.</i>	314	5,447	23,550,305	77,364,106	72,890,023	150,718,626
Miscellaneous Manufacturing Industries.....	1,928	46,375	171,877,519	263,868,974	309,523,448	574,812,594
Scientific and Professional Equipment Manufacturers—						
Instrument and related prod- ucts.....	93	8,047	37,624,015	59,703,525	63,860,750	123,467,602
Clock and watch manufactur- ers.....	27	1,036	3,892,507	7,980,252	8,243,101	16,422,305
Orthopaedic and surgical appli- ance manufacturers.....	37	330	1,127,417	938,874	1,963,492	2,878,044
Ophthalmic goods manufac- turers.....	47	962	3,171,741	3,184,728	4,110,465	7,560,456
Jewellery and silverware manu- facturers.....	225	4,469	15,840,472	29,646,657	25,987,264	55,676,781
Broom, brush and mop industry	96	2,118	6,591,273	10,200,243	12,809,244	22,575,747
Venetian blind manufacturers...	69	350	1,034,161	2,142,533	2,018,770	4,204,928
Plastic fabricators, <i>n.e.s.</i>	278	7,552	26,132,658	58,119,626	50,110,240	109,179,817
Sporting goods industry.....	107	3,440	12,736,877	19,640,754	24,393,535	43,280,687
Toys and games industry.....	73	2,831	7,467,934	14,820,448	14,397,392	29,614,301
Fur dressing and dyeing industry	15	972	3,743,378	1,265,565	5,448,617	6,833,867
Signs and displays industry.....	367	3,847	16,085,454	13,989,388	26,145,467	40,161,756

8.—Principal Statistics of Individual Manufacturing Industries, 1961—concluded

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Miscellaneous Manufacturing Industries—concluded						
Button, buckle and fastener in- dustry.....	40	1,559	4,830,623	5,985,160	8,088,884	14,158,425
Candle manufacturers.....	16	239	833,329	1,247,172	1,840,998	3,089,315
Hair goods manufacturers.....	11	68	168,109	269,483	213,669	485,477
Artificial flowers and feathers manufacturers.....	22	395	961,349	974,419	1,703,644	2,628,200
Model and pattern manufacturers	86	992	4,503,500	2,229,558	7,654,808	9,804,880
Musical instruments and sound recording industry.....	30	1,591	6,027,819	6,365,694	15,002,671	21,428,010
Typewriter supplies manufactur- ers.....	10	438	1,640,369	3,870,689	3,035,094	6,953,200
Fountain pen and pencil manufac- turers.....	18	1,082	3,730,200	6,445,089	8,349,738	15,051,086
Smokers' supplies manufacturers	10	143	514,481	1,105,408	1,188,046	2,322,476
Stamp and stencil (rubber and metal) manufacturers.....	70	859	3,396,931	1,851,842	4,602,233	6,536,292
Statuary, art goods, regalia and novelty manufacturers.....	87	768	2,196,903	2,005,813	3,429,538	5,442,599
Umbrella manufacturers.....	8	127	367,055	659,263	603,705	1,307,754
Artificial ice manufacturers.....	30	217	721,146	191,833	1,292,049	1,725,721
Other miscellaneous industries..	46	1,943	6,537,818	9,034,964	13,030,033	22,022,868
Totals, All Industries.....	32,415	1,265,032	5,231,446,969	13,127,707,976	10,682,137,680	24,243,294,949

The forty leading industries of Canada in 1961, ranked according to selling value of factory shipments, are listed in Table 9; other principal statistics for these industries are given in Table 8 under their respective group headings.

9.—The Forty Leading Manufacturing Industries, ranked according to Selling Value of Factory Shipments, 1961

NOTE.—Based on revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph p. 645).

Industry	Selling Value of Factory Shipments	Industry	Selling Value of Factory Shipments
	\$		\$
1 Pulp and paper mills.....	1,634,606,001	23 Communications equipment manufac- turers.....	251,084,190
2 Smelting and refining.....	1,471,048,021	24 Synthetic textile mills.....	248,717,577
3 Petroleum refining.....	1,184,176,374	25 Cotton yarn and cloth mills.....	236,711,105
4 Slaughtering and meat packing plants..	1,080,913,148	26 Sash and door and planing mills (excl. hardwood flooring).....	235,160,488
5 Motor vehicle manufacturers.....	870,942,359	27 Printing and bookbinding.....	230,144,643
6 Iron and steel mills.....	789,271,070	28 Tobacco products manufacturers.....	229,956,447
7 Sawmills (excl. shingle mills).....	534,590,574	29 Wire and wire products manufacturers..	220,701,880
8 Manufacturers of industrial chemicals..	476,603,231	30 Flour mills.....	220,586,667
9 Pasteurizing plants.....	411,616,839	31 Miscellaneous metal fabricating indus- tries.....	218,977,448
10 Miscellaneous food manufacturers.....	408,178,870	32 Manufacturers of electrical industrial equipment.....	218,881,168
11 Miscellaneous machinery and equip- ment manufacturers.....	390,689,239	33 Fabricated structural metal industry..	210,061,203
12 Metal stamping, pressing and coating industry.....	374,352,563	34 Manufacturers of major appliances (elec- tric and non-electric).....	206,212,477
13 Printing and publishing.....	370,327,715	35 Household furniture industry.....	205,596,993
14 Bakeries.....	369,637,256	36 Other paper converters.....	185,889,705
15 Motor vehicle parts and accessories manufacturers.....	352,778,908	37 Railway rolling-stock industry.....	182,569,012
16 Aircraft and parts manufacturers.....	348,245,173	38 Rubber tire and tube manufacturers..	180,248,120
17 Fruit and vegetable canners and pre- servers.....	328,098,257	39 Shoe factories.....	173,123,858
18 Butter and cheese plants.....	323,899,706	40 Soft drink manufacturers.....	172,647,090
19 Feed manufacturers.....	289,660,606		
20 Men's clothing factories.....	279,088,853	Totals, Leading Industries, 1961.....	16,652,910,830
21 Women's clothing factories.....	277,477,796	Totals, All Industries, 1961.....	24,243,294,949
22 Breweries.....	259,438,200		

¹ Reported on a production basis.

10.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960

NOTE.—Based on revised Standard Industrial Classification. All values in this table are for factory shipments except those marked with an asterisk, which are for gross value of products.

Representative Group and Commodity	Unit of Measure	1960	
		Quantity	Value
Foods—			\$
Biscuits, all kinds.....	lb.	259,203,977	77,653,030
Bread.....	ton	825,759	215,250,379
Butter, factory made.....	lb.	321,123,745	204,046,906
Cheese, factory made.....	"	196,200,030	69,837,962
Coffee, instant.....	"	11,360,491	25,811,059
Coffee and tea, blended, roasted and packed.....	"	130,542,271	105,984,398
Confectionery, all kinds.....	"	226,449,716	96,827,171
Cream, sold by dairy factories.....	...	...	51,270,710
Feed, chopped grain.....	ton	546,728	26,106,496
Feeds, stock and poultry, prepared.....	"	3,000,635	232,536,075
Fish, canned and otherwise prepared.....	...	...	66,685,000
Flour, wheat.....	cwt.	40,896,639	176,581,378
Fruits and vegetables, canned.....	lb.	671,922,003	92,090,166
Fruits and vegetables, frozen.....	"	104,236,661	18,102,295
Ice cream, factory made.....	gal.	39,557,325	64,561,189
Jams, jellies and marmalades.....	lb.	117,283,272	24,899,260
Lard.....	"	120,387,467	15,788,489
Margarine and margarine substitutes.....	"	167,220,261	35,063,304
Meats, canned, incl. poultry, pastes, etc.....	"	94,207,742	43,381,624
Meats, cooked, incl. sausage, wieners.....	"	323,531,288	134,823,732
Meats, cured and smoked.....	"	282,827,940	139,343,557
Meats, sold fresh and frozen, incl. poultry.....	"	2,025,646,478	746,243,095
Milk, sold by dairy factories.....	gal.	374,859,310	302,514,688
Milk, evaporated and condensed.....	lb.	339,337,594	45,515,811
Pickles, relishes and catsup.....	...	...	35,010,799
Pies, cakes and pastry.....	...	...	96,953,107
Powders, edible (custard, jelly, milk, etc.).....	...	...	68,294,285
Shortening.....	lb.	177,097,297	37,689,024
Soups, canned (except infants').....	"	269,293,647	52,003,642
Sugar, granulated (cane and beet).....	"	1,434,863,160	104,526,736
Beverages—			
Beer, ale, stout and porter (sales).....	gal.	238,731,690	399,225,643
Beverage spirits sold (net sales).....	pf. gal.	16,501,382	136,472,392
Carbonated beverages.....	gal.	157,108,330	143,928,755
Wine sold.....	"	6,767,923	17,291,202
Tobacco and Tobacco Products—			
Cigarettes.....	'000	34,698,794	509,689,068
Cigars.....	"	328,688	22,661,734
Tobacco, chewing, smoking and snuff.....	lb.	23,932,397	64,108,138
Tobacco, raw leaf, processed.....	"	161,190,523	116,525,646*
Textile Products, except Clothing—			
Bags, cotton and jute.....	doz.	9,970,387	22,584,141
Blankets.....	...	...	12,282,406
Carpets, mats and rugs.....	...	...	31,433,893
Cotton fabrics.....	...	...	111,132,022
Synthetic woven fabrics, all types.....	...	...	73,080,138
Tire fabrics.....	lb.	22,994,762	20,723,593
Twine and cordage.....	...	...	15,015,016
Woven fabrics, wool or containing wool.....	...	...	47,971,661
Yarns, cotton, rayon, wool, etc. (for sale).....	...	...	156,813,786
Clothing—			
Coats and overcoats, cloth, men's and youths'.....	No.	500,520	14,164,788
Coats, wool, women's and misses'.....	"	1,409,881	36,872,717
Coats, fur, women's (factory made), incl. jackets, boleros, etc.....	"	211,320	47,393,247
Short coats (incl. windbreakers, mackinaws, parkas, leather coats, etc.).....	doz.	535,873	39,253,293
Dresses, women's.....	No.	12,379,357	92,011,682
Footwear, leather.....	pr.	38,327,754	151,812,644
Footwear, rubber.....	"	9,943,960	25,195,817
Gloves and mittens, all kinds.....	...	...	16,284,110
Hats and caps, men's.....	doz.	660,113	11,506,031
Hats, women's and children's.....	"	432,895	14,061,668
Hosiery, all kinds.....	doz. pr.	13,584,593	68,214,353
Shirts, fine, work and sport.....	doz.	2,626,921	58,548,273
Sport suits, slacks and other sport clothing, n.e.s.....	...	...	32,575,003
Suits, men's and youths' fine woollen.....	No.	1,339,381	50,872,626
Underwear.....	...	...	54,483,711

10.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960—continued

Representative Group and Commodity	Unit of Measure	1960	
		Quantity	Value
Wood Products—			
Boxes, wooden.....	...	...	9,761,299
Lumber, planed and matched.....	M ft.b.m.	1,422,953	103,370,338
Lumber, sawn.....	"	8,021,877	512,698,607*
Pulp, wood, made for sale.....	ton	3,025,765	361,853,838
Sash, doors and other mill work.....	...	...	48,888,812
Paper Products—			
Bags, paper.....	...	...	63,322,760
Boxes, paper.....	...	...	224,177,390
Paper boards, all types (basic).....	ton	1,277,000	165,800,000*
Paper, book and writing (basic).....	"	403,000	106,574,000*
Paper, newsprint (basic).....	"	6,689,000	783,364,000*
Paper, wrapping (basic).....	"	322,000	70,779,000*
Printing, Publishing and Allied Industries—			
Books and catalogues, printed and bound.....	...	...	43,519,873
Other advertising matter, printed.....	...	...	62,192,010
Periodicals printed for publishers.....	...	...	31,474,438
Periodicals Printed by Publishers—			
Subscriptions and sales.....	...	...	83,387,128
Gross revenue from advertising.....	...	...	230,509,067
Sheet forms, commercial, legal, etc., printed.....	...	...	31,474,438
Iron and Steel Products—			
Bars, iron and steel, hot rolled (sold).....	ton	723,753	105,903,514
Boilers, heating and power.....	No.	16,147	33,806,692
Castings, grey iron, made for sale.....	...	...	38,919,487
Farm implements and parts.....	...	...	140,695,000
Forgings, steel and other.....	...	...	27,384,242
Hardware, builders', pole line and other.....	...	...	49,678,000
Miscellaneous machinery and equipment, and office and store machinery.....	...	...	495,914,536
Pig iron (sold).....	ton	676,964	36,160,653
Pipes, tubing and fittings, iron and steel.....	...	...	177,571,068
Rolled iron and steel forms, semi-finished, sold.....	ton	620,114	56,282,821
Sheets, bars and other cold-rolled products, sold.....	"	1,129,304	202,718,594
Steel ingots and castings, sold.....	"	312,989	59,192,945
Steel shapes erected, buildings, bridges, etc.....	...	...	184,505,952*
Steel shapes, structural, made in primary mills.....	ton	234,530	30,075,626
Stoves, coal, wood, electric and gas.....	...	...	48,449,165
Tools and implements, hand, all kinds and parts.....	...	...	32,323,000
Wire, wire rope and cable, steel.....	...	...	62,737,489
Transportation Equipment—			
Automobiles, commercial.....	No.	69,338	163,715,297
Automobiles, passenger.....	"	322,409	648,360,011
Automobile parts and accessories, incl. tires.....	...	...	497,662,098
Buses.....	No.	164	4,500,083
Cars, railway, complete, freight and passenger.....	"	2,510	25,396,966*
Locomotives, diesel-electric, new.....	"	172	29,189,368*
Ships and ship repairs.....	...	...	149,127,992*
Non-ferrous Metal Products—			
Jewellery.....	...	...	27,452,910
Kitchenware, aluminum.....	...	...	5,707,208
Silverware.....	...	...	7,553,938
Smelter and refinery products.....	...	...	1,495,177,517*
Electrical Apparatus and Supplies—			
Batteries, electric, storage.....	...	...	24,932,389
Radio receiving sets, complete.....	No.	648,938	24,487,177
Refrigerators, household, mechanical.....	"	239,436	40,211,631
Television sets.....	...	...	53,726,999
Wires and cables, electric.....	...	...	149,795,515
Non-metallic Mineral Products—			
Abrasives.....	ton	271,716	32,443,577
Coke, gas-house.....	...	...	5,025,437*
Concrete, ready-mixed.....	cu. yd.	8,228,098	102,976,064
Gas, manufactured, sold.....	...	...	32,959,256*
Glass, pressed and blown (bottles, sealers, ovenware, etc.).....	...	...	62,553,640

10.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1960—concluded

Representative Group and Commodity	Unit of Measure	1960	
		Quantity	Value
			\$
Chemicals and Allied Products—			
Calcium and sodium compounds.....	...	...	62,197,917
Fertilizers, mixed.....	...	...	42,763,452
Medicinal and pharmaceutical preparations.....	...	...	159,390,000
Paints, enamel and varnishes.....	...	...	134,341,473
Synthetic resins.....	lb.	315,612,029	86,037,318
Soaps and synthetic detergents.....	"	340,384,000	97,910,000
Toilet preparations.....	...	...	79,487,670
Miscellaneous—			
Bags, hand and hand luggage.....	...	...	16,471,239
Brooms and household brushes.....	doz.	584,038	5,085,516
Cans, metal, for food.....	...	...	74,433,534
Furniture, wood and metal.....	...	...	179,897,838
Gasoline.....	bbl.	102,662,026	531,607,344*
Boots and shoes with leather or fabric uppers (except felt).....	pr.	36,549,798	144,311,122
Mattresses.....	...	...	24,501,728
Mops, floor.....	doz.	376,423	3,704,885
Oil, fuel (made for sale).....	bbl.	119,741,510	416,744,146*
Pianos, organs and parts.....	...	...	6,607,352
Scientific and professional equipment.....	...	...	88,786,398
Sporting goods.....	...	...	36,869,461
Springs, bed and other furniture.....	...	...	15,472,570
Toys and games.....	...	...	33,055,937

Subsection 2.—Manufactures classified by Origin of Materials

The distinction made between farm materials of Canadian and foreign origin is based on whether the materials are indigenous to Canada rather than on their actual source. Thus, the industries included in the foreign origin classes are those depending upon materials that cannot be grown in Canada, such as tea, coffee, spices, cane sugar, rice, rubber, cotton, etc. Industries included in the Canadian origin classes may, however, be using large quantities of imported materials. Figures for 1960 were the latest available for this classification at the time of going to press.

11.—Principal Statistics of Manufacturing Industries classified according to Origin of Materials Used, by Main Group, 1960

Origin of Materials Used	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Farm origin.....	9,878	314,238	1,073,736,685	3,912,073,321	2,381,692,269	6,346,630,104
Mineral origin.....	7,596	525,526	2,447,984,283	5,836,153,285	4,904,327,606	11,040,376,612
Forest origin.....	13,472	284,354	1,155,127,817	2,010,190,858	2,222,320,904	4,367,567,910
Marine origin.....	402	13,357	29,717,560	103,863,226	53,004,983	169,529,913
Wildlife origin.....	508	5,108	18,487,377	37,739,105	30,124,268	67,790,259
Mixed origin.....	4,826	152,046	482,113,671	805,051,045	941,738,964	1,755,562,285
Grand Totals.....	36,682	1,294,629	5,207,167,393	12,705,070,820	10,533,208,994	23,747,457,083
Farm Origin Group—						
From field crops.....	6,124	173,552	615,867,227	1,987,652,199	1,607,948,456	3,624,138,419
From animal husbandry.....	3,754	140,686	457,869,458	1,924,421,122	773,743,813	2,722,491,685
Totals, Farm Origin...	9,878	314,238	1,073,736,685	3,912,073,321	2,381,692,269	6,346,630,104
Canadian origin.....	8,965	258,758	870,052,344	3,437,852,097	1,929,868,553	5,417,305,297
Foreign.....	913	55,480	203,684,341	474,221,224	451,823,716	929,324,807

Subsection 3.—Manufactures classified by Type of Ownership

Figures showing the classification of the type of ownership under which Canadian manufacturers operate are available from 1946. Although the first survey did not include the fish curing and packing industry, its inclusion in subsequent years has not materially altered the percentage distribution of individual ownership, incorporated companies, etc.

As is to be expected, the smaller establishments, regardless of the type of products manufactured, are carried on mainly under individual ownership or partnerships. Industries conducted on a small scale usually contain a large number of establishments in these categories, the percentage decreasing as the scale of operation increases, as shown for 1960 in Table 12.

12.—Percentage Distribution of Manufacturing Establishments, Employees and Shipments, by Type of Ownership and Size of Establishment, 1960

Item and Type of Ownership	Under \$25,000	\$25,000 to \$99,999	\$100,000 to \$499,999	\$500,000 and Over
	p.c.	p.c.	p.c.	p.c.
Establishments—				
Individual ownership.....	73.4	43.0	10.4	0.7
Partnerships.....	13.8	15.3	6.5	0.9
Incorporated companies.....	12.2	39.4	78.1	96.0
Co-operatives.....	0.6	2.3	5.0	2.4
Totals.....	100.0	100.0	100.0	100.0
Employees—				
Individual ownership.....	66.7	37.3	6.2	0.2
Partnerships.....	15.9	15.1	5.4	0.3
Incorporated companies.....	16.7	46.4	86.4	98.7
Co-operatives.....	0.7	1.2	2.0	0.8
Totals.....	100.0	100.0	100.0	100.0
Factory Shipments—				
Individual ownership.....	68.7	38.9	7.5	0.2
Partnerships.....	14.7	14.9	5.3	0.3
Incorporated companies.....	15.8	43.5	82.4	98.3
Co-operatives.....	0.8	2.7	4.8	1.2
Totals.....	100.0	100.0	100.0	100.0

Of the 36,682 establishments operating in 1960, individual ownership numbered 13,840 establishments, partnerships 3,793, incorporated companies 18,148, and co-operatives 901. The percentage distribution of the four categories of ownership is given in Table 13 for the years 1951-60 and by province and industrial group for 1960. It is interesting to note that incorporated companies are becoming increasingly important, the percentage of the total number of establishments rising from 36.9 in 1951 to 49.5 in 1960.

13.—Percentage Distribution of Manufacturing Establishments classified by Type of Ownership, 1951-60, and by Province and Industrial Group, 1960

Year	Individual Ownership	Partner- ships	Incor- porated Companies	Co-opera- tives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1951.....	44.6	15.5	36.9	3.0	100.0
1952.....	44.9	15.4	36.9	2.8	100.0
1953.....	44.4	14.8	38.2	2.6	100.0
1954.....	43.6	14.3	39.5	2.6	100.0
1955.....	42.7	13.6	41.1	2.6	100.0
1956.....	41.4	12.7	43.4	2.5	100.0
1957.....	40.6	12.0	44.9	2.5	100.0
1958.....	39.2	11.1	47.1	2.6	100.0
1959.....	38.4	10.8	48.2	2.6	100.0
1960.....	37.7	10.3	49.5	2.5	100.0

13.—Percentage Distribution of Manufacturing Establishments classified by Type of Ownership, 1951-60, and by Province and Industrial Group, 1960—concluded

Year, Province or Territory and Group	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
Province, 1960					
Newfoundland.....	49.0	26.0	25.0	—	100.0
Prince Edward Island.....	49.5	15.2	29.3	6.0	100.0
Nova Scotia.....	49.0	11.6	37.2	2.2	100.0
New Brunswick.....	49.1	9.3	39.7	1.9	100.0
Quebec.....	43.0	8.5	44.6	3.9	100.0
Ontario.....	32.0	10.5	56.1	1.4	100.0
Manitoba.....	37.4	11.2	49.4	2.0	100.0
Saskatchewan.....	46.1	12.0	35.6	6.3	100.0
Alberta.....	35.6	11.9	49.2	3.3	100.0
British Columbia.....	31.8	11.1	56.1	1.0	100.0
Yukon and Northwest Territories.....	35.7	—	64.3	—	100.0
Industrial Group, 1960					
Foods and beverages.....	41.0	9.9	38.9	10.2	100.0
Tobacco products.....	17.5	1	75.0	7.5	100.0
Rubber.....	9.8	1	90.2	—	100.0
Leather.....	23.4	7.2	69.4	—	100.0
Textiles.....	25.9	9.7	64.4	2	100.0
Knitting mills.....	13.8	7.7	78.5	2	100.0
Clothing.....	23.7	12.4	63.9	—	100.0
Wood.....	58.5	14.2	27.2	0.1	100.0
Furniture and fixtures.....	53.1	12.2	34.7	—	100.0
Paper and allied industries.....	6.2	2.2	91.6	—	100.0
Printing, publishing and allied industries.....	36.8	10.7	52.2	0.3	100.0
Primary metal.....	12.2	7.4	80.4	—	100.0
Metal fabricating (except machinery and transportation equipment).....	24.8	9.3	65.9	—	100.0
Machinery (except electrical).....	7.3	3.8	88.9	2	100.0
Transportation equipment.....	23.4	8.6	68.0	—	100.0
Electrical products.....	5.1	2.2	92.7	—	100.0
Non-metallic mineral products.....	28.0	8.8	63.2	2	100.0
Petroleum and coal products.....	4.2	1	95.8	1	100.0
Chemicals and chemical products.....	12.1	2.7	84.9	0.3	100.0
Miscellaneous manufacturing industries.....	41.5	10.0	48.5	—	100.0

¹ Included with individual ownership.² Included with incorporated companies.

The establishments operating under individual ownership are not as important from the point of view of employment provided as their large numbers would indicate. According to Tables 14 and 15, these establishments, which comprise 37.7 p.c. of the total number, had only 4.1 p.c. of the total employees. Partnerships accounted for 10.3 p.c. of the number of establishments and 2.0 p.c. of the total employees. Incorporated companies with 49.5 p.c. of the number of establishments had 92.9 p.c. of the employees. Co-operatives with 2.5 p.c. of the number had 1 p.c. of the employees.

Thus on the basis of employment provided, incorporated companies are, by a wide margin, the most important factor in the employment field. Such companies had more than 99 p.c. of the employees in the rubber, paper, primary metal, transportation equipment and electrical products groups; over 98 p.c. of the employees in the tobacco products, machinery, and chemicals and chemical products groups; over 97 p.c. in the petroleum and coal products group; 96 p.c. in the textiles and knitting mills groups; and 95 p.c. in the metal fabricating group. The lowest proportion was 80.7 p.c. in the wood group.

14.—Percentage Distribution of Employment in the Manufacturing Industries classified by Type of Ownership, 1951-60, and by Province and Industrial Group, 1960

Year, Province or Territory and Group	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1951.....	6.1	3.7	89.3	0.9	100.0
1952.....	5.9	3.6	89.6	0.9	100.0
1953.....	5.7	3.3	90.2	0.8	100.0
1954.....	5.4	3.3	90.5	0.8	100.0
1955.....	5.2	2.9	91.0	0.9	100.0
1956.....	4.8	2.6	91.8	0.8	100.0
1957.....	4.5	2.4	92.2	0.9	100.0
1958.....	4.4	2.3	92.4	0.9	100.0
1959.....	4.3	2.2	92.6	0.9	100.0
1960.....	4.1	2.0	92.9	1.0	100.0
Province, 1960					
Newfoundland.....	2.8	1.8	95.4	—	100.0
Prince Edward Island.....	13.1	6.0	72.9	8.0	100.0
Nova Scotia.....	7.8	2.2	87.9	2.1	100.0
New Brunswick.....	6.8	2.5	89.2	1.5	100.0
Quebec.....	5.3	2.3	91.4	1.0	100.0
Ontario.....	2.7	1.8	95.2	0.3	100.0
Manitoba.....	4.3	2.3	91.9	1.5	100.0
Saskatchewan.....	8.0	3.9	75.5	12.6	100.0
Alberta.....	5.5	2.5	89.5	2.5	100.0
British Columbia.....	4.1	2.2	91.8	1.9	100.0
Yukon and Northwest Territories.....	12.9	—	87.1	—	100.0
Industrial Group, 1960					
Foods and beverages.....	7.6	3.1	83.8	5.5	100.0
Tobacco products.....	0.8	1	98.4	0.8	100.0
Rubber.....	0.2	1	99.8	—	100.0
Leather.....	3.9	2.0	94.1	—	100.0
Textiles.....	2.1	1.2	96.7	2	100.0
Knitting mills.....	2.3	1.7	96.0	2	100.0
Clothing.....	5.8	6.2	88.0	—	100.0
Wood.....	14.2	4.8	80.7	0.3	100.0
Furniture and fixtures.....	10.1	4.9	85.0	—	100.0
Paper and allied industries.....	0.2	0.2	99.6	—	100.0
Printing, publishing and allied industries.....	6.6	3.1	89.8	0.5	100.0
Primary metal.....	0.3	0.2	99.5	—	100.0
Metal fabricating (except machinery and transportation equipment).....	3.0	2.0	95.0	—	100.0
Machinery (except electrical).....	0.6	1.0	98.4	2	100.0
Transportation equipment.....	0.5	0.3	99.2	—	100.0
Electrical products.....	0.2	0.2	99.6	—	100.0
Non-metallic mineral products.....	3.3	1.9	94.8	2	100.0
Petroleum and coal products.....	2.6	1	97.4	1	100.0
Chemicals and chemical products.....	0.8	0.2	98.9	0.1	100.0
Miscellaneous manufacturing industries.....	6.5	2.9	90.6	—	100.0

¹ Included with individual ownership.

² Included with incorporated companies.

Section 3.—Principal Factors in Manufacturing Production

In addition to the factors dealt with in the following Subsections 1 and 2, one of the principal indicators of growth in manufacturing production is the amount paid as salaries and wages to various groups of employees within those industries. The latest information available on employment, earnings and hours worked in manufacturing industries at the time of going to press was that for 1960, summarized in the 1962 Year Book at pp. 722-727.

Subsection 1.—Capital and Repair Expenditures

The current series of statistics covering expenditures on fixed capital and repairs by manufacturing industries commences with the year 1944. Capital expenditures by manufacturers in 1960 totalled \$334,700,000 for construction, a figure slightly lower than the \$373,900,000 so spent in 1959; the \$842,700,000 spent for machinery and equipment in 1960, however, was higher than the comparable expenditure in 1959, resulting in a total of \$1,177,400,000 as against \$1,143,800,000 in the previous year. Repair expenditure amounted to \$671,600,000 in 1960 and \$662,500,000 in 1959. Of the total capital expenditures in 1960, 16.5 p.c. was reported by primary metal industries, 14.1 p.c. by the paper and allied industries, 12.9 p.c. by foods and beverages and 9.1 p.c. by chemicals and chemical products.

15.—Capital and Repair Expenditures by the Manufacturing Industries, 1951-60, and by Province and Industrial Group, 1960

Year, Province and Industrial Group	Capital Expenditure			Repair Expenditure		
	Con- struction	Machin- ery and Equip- ment	Total	Con- struction	Machin- ery and Equip- ment	Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1951.....	267.6	525.0	792.6	85.0	337.0	422.0
1952.....	343.6	629.0	972.6	95.2	363.5	458.7
1953.....	324.5	644.5	969.0	94.6	385.5	480.1
1954.....	287.6	534.5	822.1	97.6	390.9	488.5
1955.....	344.5	601.8	946.3	100.6	413.0	513.6
1956.....	487.7	906.1	1,393.8	112.2	465.6	577.8
1957.....	519.9	959.0	1,478.9	115.4	498.5	613.9
1958.....	397.6	697.4	1,095.0	109.8	462.1	571.9
1959.....	373.9	769.9	1,143.8	125.2	537.3	662.5
1960.....	334.7	842.7	1,177.4	124.4	547.2	671.6
Province, 1960						
Newfoundland.....	4.4	7.6	12.0	1.1	6.5	7.6
Prince Edward Island.....	0.1	0.5	0.6	0.1	0.3	0.4
Nova Scotia.....	9.1	17.9	27.0	4.0	13.3	17.3
New Brunswick.....	11.0	18.7	29.7	1.7	11.4	13.1
Quebec.....	86.4	218.2	304.6	35.5	148.5	184.0
Ontario.....	146.6	408.2	554.8	56.6	284.2	340.8
Manitoba.....	15.6	34.2	49.8	4.5	10.0	14.5
Saskatchewan.....	5.8	7.0	12.8	2.8	2.5	5.3
Alberta.....	21.2	41.9	63.1	7.2	14.0	21.2
British Columbia.....	34.5	88.5	123.0	10.9	56.5	67.4
Industrial Group, 1960						
Foods and beverages.....	52.7	99.2	151.9	14.2	55.7	69.9
Tobacco products.....	1.7	5.2	6.9	1.2	3.3	4.5
Rubber.....	6.9	17.0	23.9	1.0	8.1	9.1
Leather.....	1.3	2.6	3.9	0.4	2.2	2.6
Textiles.....	6.0	21.1	27.1	3.4	17.6	21.0
Knitting mills.....	0.8	5.0	5.8	0.4	1.7	2.1
Clothing.....	1.5	5.0	6.5	0.8	2.6	3.4
Wood.....	12.6	28.6	41.2	5.5	28.9	34.4
Furniture and fixtures.....	3.0	4.6	7.6	0.9	2.3	3.2
Paper and allied industries.....	35.1	131.2	166.3	9.2	93.9	103.1
Printing, publishing and allied industries.....	7.4	21.7	29.1	2.3	6.8	9.1
Primary metal.....	51.3	142.9	194.2	20.0	145.1	165.1
Metal fabricating (except machinery and trans- portation equipment).....	12.2	34.5	46.7	5.2	25.4	30.6
Machinery (except electrical).....	8.4	14.6	23.0	3.0	9.5	12.5
Transportation equipment.....	10.5	31.9	48.4	10.2	31.1	41.3
Electrical products.....	7.6	24.2	31.8	3.8	16.3	20.1
Non-metallic mineral products.....	15.7	33.5	49.2	4.0	38.6	42.6
Petroleum and coal products.....	51.9	7.8	59.7	26.0	4.0	30.0
Chemicals and chemical products.....	34.9	72.1	107.0	10.8	48.2	59.0
Miscellaneous manufacturing industries.....	7.2	13.6	20.8	2.1	5.9	8.0
Capital items charged to operating expenses.....	—	126.4	126.4	—	—	—

Subsection 2.—Size of Manufacturing Establishments

The size of a manufacturing establishment is generally measured either by the value of factory shipments or by the number of employees but each of these methods has its limitations. The former measure has to be adjusted for changes in the price level and, as between industries, it makes those in which the cost of raw materials is relatively high appear to operate on a larger scale. The latter takes no account of the differences in capital equipment at different times or in various industries and obviously the increased use of machinery may lead to an increase in production concurrently with a decrease in number of employees. Also, in measuring size on the basis of employment, industries with a high capital investment in machinery and equipment are underrated as compared with industries lacking such equipment and consequently employing a relatively larger labour force.

Size as Measured by Selling Value of Factory Shipments.—In 1946, after heavy wartime production had ceased and reconversion had barely begun, there were 1,442 manufacturing establishments, each with an output of \$1,000,000 or over. Their combined production was valued at \$5,377,870,217 and accounted for 66.9 p.c. of the total for all manufacturing plants. By 1949, the number of factories in that category had increased to 1,926 and the proportion of their production to the total was 74.4 p.c. As a result of the tremendous industrial expansion and the increase in prices of the 1950's, the number of plants with shipments valued at over \$1,000,000 increased to 3,498 in 1960. These plants contributed 81.2 p.c. of the total output in that year.

16.—Manufacturing Establishments and Total and Average Production classified by Value of Product Group, 1949, 1955, 1959 and 1960

Value Group	Estab- lish- ments	Total Production ¹	Average per Estab- lishment	Estab- lish- ments	Total Production ¹	Average per Estab- lishment
	1949			1955 ²		
	No.	\$	\$	No.	\$	\$
Under \$25,000.....	16,176	145,907,685	9,020	15,327	143,480,957	9,362
\$ 25,000 but under \$ 50,000.....	4,884	174,899,010	35,810	5,112	184,847,245	36,159
50,000 " 100,000.....	4,487	320,878,071	71,513	4,781	343,512,650	50,933
100,000 " 200,000.....	3,630	514,921,581	141,852	4,250	608,414,152	143,156
200,000 " 500,000.....	3,195	1,000,486,294	313,141	3,970	1,261,916,569	317,863
500,000 " 1,000,000.....	1,494	1,041,235,578	696,945	2,013	1,411,584,589	701,234
1,000,000 " 5,000,000.....	1,505	3,164,936,378	2,102,948	2,101	4,364,363,277	2,077,279
5,000,000 or over.....	421	6,116,328,703	14,528,097	628	11,195,814,372	17,827,730
Totals and Averages.....	35,792	12,479,593,300	348,670	38,182	19,513,933,811	511,077
	1959			1960		
	No.	\$	\$	No.	\$	\$
Under \$25,000.....	11,967	118,491,742	9,902	11,664	121,760,598	10,439
\$ 25,000 but under \$ 50,000.....	4,795	172,972,326	36,073	5,044	181,631,031	36,009
50,000 " 100,000.....	4,874	350,262,824	71,864	4,937	364,936,319	71,893
100,000 " 200,000.....	4,352	626,769,497	143,033	4,511	641,077,012	142,114
200,000 " 500,000.....	4,459	1,424,683,038	319,507	4,651	1,478,893,940	317,973
500,000 " 1,000,000.....	2,322	1,645,987,369	708,866	2,377	1,683,585,980	708,282
1,000,000 " 5,000,000.....	2,624	5,594,574,528	2,132,079	2,723	5,771,254,154	2,119,447
5,000,000 or over.....	770	13,377,860,157	17,373,844	775	13,514,318,049	17,437,830
Totals and Averages.....	36,193	23,311,601,481	644,091	36,682	23,747,457,083	647,357

¹ In 1952 gross value of products was replaced by selling value of factory shipments. included from 1955.

² Newfoundland

Size as Measured by Number of Employees.—In 1946, the 311 establishments employing 500 or more persons accounted for 32.3 p.c. of the total number of employees engaged in manufacturing. In 1960 there were 350 plants with more than 500 employees, 55 of them with over 1,500. The 350 plants employed 31.5 p.c. of the total workers in all manufacturing establishments.

17.—Establishments and Employees in Manufactures classified by Number of Employees per Establishment, 1949, 1955, 1959 and 1960

Employee Group	Estab- lishments	Employees	Average per Estab- lishment	Estab- lishments	Employees	Average per Estab- lishment
	1949			1955 ¹		
	No.	No.	No.	No.	No.	No.
Under 5 employees.....	16,647	34,865	2.1	16,762	36,340	2.2
5 to 14 ".....	9,133	75,482	8.3	9,864	81,471	8.3
15 " 49 ".....	5,967	159,012	26.7	6,340	169,575	26.7
50 " 99 ".....	1,905	132,069	69.3	2,082	144,411	69.4
100 " 199 ".....	1,114	156,084	140.1	1,175	163,091	138.8
200 " 499 ".....	694	213,130	307.1	739	227,667	308.1
500 " 999 ".....				243	167,720	690.2
1,000 " 1,499 ".....	332	391,455	1,179.1	76	91,840	1,208.4
1,500 or over.....				61	200,413	3,285.5
Head offices ²	—	9,110	—	—	15,933	—
Not classifiable.....	—	—	—	840	—	—
Totals and Averages.....	35,792	1,171,207	32.7	38,182	1,298,461	34.0
	1959			1960		
	No.	No.	No.	No.	No.	No.
Under 5 employees.....	14,594	31,710	2.2	14,469	32,235	2.2
5 to 14 ".....	9,728	80,558	8.3	9,866	81,890	8.3
15 " 49 ".....	6,466	174,506	27.0	6,698	180,256	26.9
50 " 99 ".....	2,250	156,127	69.4	2,319	161,365	69.6
100 " 199 ".....	1,255	173,220	138.0	1,266	176,163	139.1
200 " 499 ".....	799	241,597	302.4	785	238,109	303.3
500 " 999 ".....	252	172,659	685.2	238	165,129	693.8
1,000 " 1,499 ".....	72	89,438	1,242.2	57	70,922	1,244.2
1,500 or over.....	52	167,454	3,220.3	55	171,670	3,121.3
Head offices ²	—	16,687	—	—	16,890	—
Not classifiable.....	725	—	—	929	—	—
Totals and Averages.....	36,193	1,303,956	36.0	36,682	1,294,629	35.3

¹ Newfoundland included from 1955.

² Includes only those head offices not located at a plant.

18.—Manufacturing Establishments classified by Number of Employees and by Province, 1960

Province or Territory	Employees—					Total
	Up to 499	500 to 799	800 to 999	1,000 to 1,499	1,500 or Over	
	No.	No.	No.	No.	No.	No.
Newfoundland.....	633	—	—	1	1	635
Prince Edward Island.....	184	—	—	—	—	184
Nova Scotia.....	1,272	2	2	1	—	1,278
New Brunswick.....	894	3	2	2	1	901
Quebec.....	11,833	66	21	22	19	11,961
Ontario.....	13,226	82	24	25	30	13,387
Manitoba.....	1,583	5	1	2	1	1,592
Saskatchewan.....	887	—	—	—	—	887
Alberta.....	1,837	10	1	—	—	1,848
British Columbia.....	3,969	14	5	4	3	3,995
Yukon and Northwest Territories.....	14	—	—	—	—	14
Canada.....	36,332	182	56	57	55	36,682

Table 19 summarizes the degree of concentration in some of the leading manufacturing industries of Canada. Concentration is extremely marked in the motor vehicle, smelting and refining, pulp and paper mills, iron and steel mills, and aircraft and parts industries. On the other hand, the degree of concentration is low in such industries as women's clothing factories, printing and publishing, sawmills, miscellaneous foods, pasteurizing plants, bakeries, men's clothing factories, fruit and vegetable canners and preservers.

19.—Percentage Importance of Establishments, each Employing 200 or more Persons, in the 25 Leading Industries, 1960

	Industry	Number of Establishments Employing 200 or more Persons	Percentage of Total Establishments in the Industry	Percentage of Total Shipments in the Industry
1	Pulp and paper mills.....	81	63.3	95.0
2	Smelting and refining.....	20	87.0	97.4
3	Petroleum refining.....	18	40.9	79.5
4	Slaughtering and meat packing plants.....	35	16.7	74.9
5	Motor vehicle manufacturers.....	8	44.4	98.5
6	Iron and steel mills.....	18	37.5	93.8
7	Sawmills (including shingle mills).....	22	0.4	28.1
8	Manufacturers of industrial chemicals.....	17	13.0	65.3
9	Pasteurizing plants.....	22	2.8	32.5
10	Miscellaneous machinery and equipment manufacturers.....	32	7.8	47.7
11	Miscellaneous food manufacturers.....	8	2.6	30.6
12	Bakeries.....	28	1.1	33.0
13	Printing and publishing.....	29	3.9	68.0
14	Metal stamping, pressing and coating industry.....	20	3.9	46.1
15	Fruit and vegetable canners and preservers.....	12	3.3	40.3
16	Aircraft and parts manufacturers.....	20	24.1	91.2
17	Butter and cheese plants.....	—	—	—
18	Motor vehicle parts and accessories manufacturers.....	15	12.6	68.5
19	Feed manufacturers.....	—	—	—
20	Women's clothing factories.....	7	1.1	6.4
21	Men's clothing factories.....	30	5.9	35.9
22	Breweries.....	12	22.2	62.2
23	Printing and bookbinding.....	11	0.6	25.5
24	Manufacturers of electrical industrial equipment.....	23	23.0	78.7
25	Communications equipment manufacturers.....	18	13.6	79.4

PART III.—PROVINCIAL AND LOCAL DISTRIBUTION OF MANUFACTURING PRODUCTION

Section 1.—Provincial Distribution of Manufacturing Production

This Section shows the distribution and concentration of the manufacturing industries in each province. Ontario and Quebec are by far the most important manufacturing provinces of Canada. Their combined production in 1961 amounted to \$19,284,587,215 or 79.5 p.c. of the total factory shipments of manufactured products.

Table 1 shows the outstanding predominance of Ontario and Quebec in each industrial group. In 1961, Quebec led in the manufacture of tobacco products, leather goods, textiles, knitting mills, clothing and products of petroleum and coal and had a very slight margin over Ontario in output of paper. In each of the other groups, except wood products, Ontario had the greater production of the two provinces. In the production of wood products, British Columbia, with 54 p.c. of the total, held the dominant position, outranking both Quebec and Ontario which accounted for 18 p.c. and 17 p.c., respectively, of the total. In each of the other groups Ontario and Quebec led by a wide margin.

This Section normally carries details of leading industries in each province. However, since there were no later figures available at the time of printing than those given in the 1962 edition, the reader is referred for such data to pp. 652-662 of that issue.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961

NOTE.—Based on the revised Standard Industrial Classification (see p. 651) and new establishment concept (see third paragraph, p. 645).

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland	338	9,896	35,969,805	60,628,868	70,009,939	137,224,209
Foods and beverages.....	65	4,060	8,614,106	20,468,769	18,646,300	40,440,439
Leather.....	1	1	1	1	1	1
Textiles.....	1	1	1	1	1	1
Knitting mills.....	1	1	1	1	1	1
Clothing.....	1	1	1	1	1	1
Wood.....	192	652	1,479,210	2,285,357	1,809,041	4,044,652
Furniture and fixtures.....	7	27	92,733	64,053	118,287	185,535
Paper and allied industries ¹	2	3,196	19,114,294	29,892,579	39,224,895	73,725,374
Printing, publishing and allied in- dustries.....	29	424	1,379,849	692,774	2,471,175	3,231,348
Primary metal.....	1	1	1	1	1	1
Metal fabricating (except machin- ery and transportation equip- ment).....	6	184	680,976	1,167,545	1,004,340	2,414,196
Machinery (except electrical).....	1	1	1	1	1	1
Transportation equipment.....	1	1	1	1	1	1
Electrical products.....	1	1	1	1	1	1
Non-metallic mineral products.....	13	388	1,517,909	2,392,197	3,110,744	5,767,384
Chemicals and chemical products.....	1	1	1	1	1	1
Miscellaneous manufacturing in- dustries.....	24	965	3,090,728	3,665,594	3,625,207	7,415,281
Prince Edward Island	156	1,724	4,207,474	21,191,058	8,131,146	30,041,039
Foods and beverages.....	72	1,106	2,671,659	17,676,783	5,053,347	23,254,660
Tobacco products.....	3	3	3	3	3	3
Leather.....	3	3	3	3	3	3
Textiles.....	3	3	3	3	3	3
Wood.....	51	160	327,192	339,457	419,445	787,998
Furniture and fixtures.....	3	3	3	3	3	3
Paper and allied industries.....	3	3	3	3	3	3
Printing, publishing and allied in- dustries.....	8	186	506,644	238,234	969,915	1,230,441
Primary metal.....	3	3	3	3	3	3
Metal fabricating (except machin- ery and transportation equip- ment).....	3	3	3	3	3	3
Transportation equipment.....	4	33	87,433	101,348	98,547	216,220
Non-metallic mineral products.....	6	41	99,318	114,511	182,914	298,299
Chemicals and chemical products.....	3	3	3	3	3	3
All other groups.....	15	198	515,228	2,720,725	1,406,978	4,253,421
Nova Scotia	1,002	26,801	88,919,256	206,463,487	159,218,497	375,306,900
Foods and beverages.....	323	8,690	22,199,515	75,697,906	44,864,525	123,821,865
Leather.....	1	1	1	1	1	1
Textiles.....	7	499	1,283,113	2,350,460	2,965,165	5,482,309
Knitting mills.....	7	1,169	2,412,920	4,905,924	4,143,022	9,139,732
Clothing.....	11	346	574,515	1,321,326	879,537	2,210,767
Wood.....	341	2,425	5,298,240	12,351,339	8,954,743	21,941,233
Furniture and fixtures.....	33	325	746,901	1,000,358	1,207,676	2,247,303
Paper and allied industries.....	5	1,449	6,021,909	10,690,331	13,476,271	25,963,405
Printing, publishing and allied in- dustries.....	78	1,328	5,146,971	2,955,038	9,108,074	12,204,037
Primary metal.....	1	1	1	1	1	1
Metal fabricating (except machin- ery and transportation equip- ment).....	46	1,415	5,239,818	9,079,534	8,706,048	18,938,799
Machinery (except electrical).....	5	271	986,235	474,405	1,565,063	2,120,916
Transportation equipment.....	65	3,670	14,228,954	11,143,291	15,174,222	26,829,054
Electrical products.....	1	1	1	1	1	1
Non-metallic mineral products.....	32	465	1,406,070	2,362,195	2,723,009	5,456,364
Petroleum and coal products.....	1	1	1	1	1	1
Chemicals and chemical products.....	15	228	843,785	2,582,104	3,336,055	5,856,655
Miscellaneous manufacturing in- dustries.....	34	4,521	22,530,310	69,549,276	42,115,087	113,094,461

¹ Confidential; included in "Miscellaneous manufacturing industries".

² Publication of these figures was

authorized by the firms concerned.

³ Confidential; included under "All other groups".

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961—continued

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
New Brunswick	708	22,443	73,892,368	223,050,728	159,979,430	397,456,695
Foods and beverages.....	235	6,839	17,441,886	84,599,503	44,854,305	132,668,630
Leather.....	4	290	688,679	1,000,256	1,122,130	2,158,418
Textiles.....	11	497	997,720	1,809,542	1,633,259	3,673,597
Knitting mills.....	1	1	1	1	1	1
Clothing.....	4	234	333,128	228,108	458,515	703,709
Wood.....	260	2,933	7,266,933	16,743,573	13,561,201	30,493,702
Furniture and fixtures.....	20	105	256,518	310,983	414,837	735,542
Paper and allied industries.....	19	4,565	22,355,424	51,553,285	51,344,309	113,578,682
Printing, publishing and allied in- dustries.....	51	974	3,452,666	2,118,049	5,759,483	8,025,110
Primary metal.....	1	1	1	1	1	1
Metal fabricating (except machin- ery and transportation equip- ment).....	30	987	3,779,525	5,807,640	6,051,954	12,075,359
Machinery (except electrical).....	1	1	1	1	1	1
Transportation equipment.....	8	2,755	9,514,922	8,240,883	11,295,555	19,890,385
Electrical products.....	4	673	2,134,283	3,317,056	3,644,222	7,144,346
Non-metallic mineral products.....	28	567	1,950,686	2,342,603	4,422,535	7,873,568
Petroleum and coal products.....	1	1	1	1	1	1
Chemicals and chemical products.....	7	143	526,501	3,791,471	1,386,802	5,334,107
Miscellaneous manufacturing in- dustries.....	27	881	3,193,497	41,187,776	14,032,323	53,101,540
Quebec	10,955	423,729	1,626,572,189	3,982,419,548	3,207,856,006	7,327,257,662
Foods and beverages.....	2,420	48,690	172,197,381	823,149,444	464,989,857	1,302,242,856
Tobacco products.....	21	6,828	29,527,391	104,901,410	85,892,939	193,459,191
Rubber.....	33	5,703	21,137,048	31,984,440	36,492,736	69,726,799
Leather.....	303	16,397	43,578,230	67,471,320	69,850,091	137,487,844
Textiles.....	388	38,175	126,915,646	272,926,148	222,658,115	504,148,479
Knitting mills.....	206	11,066	29,657,213	63,004,173	51,832,913	114,802,182
Clothing.....	1,504	56,304	146,608,083	284,424,117	238,800,500	522,615,211
Wood.....	1,699	17,405	47,578,472	100,926,720	80,883,491	185,818,095
Furniture and fixtures.....	715	12,704	40,131,819	62,437,766	66,438,042	129,780,777
Paper and allied industries.....	188	35,724	175,147,493	367,425,110	386,092,935	797,803,472
Printing, publishing and allied in- dustries.....	992	20,082	88,832,390	83,370,544	168,151,018	252,775,773
Primary metal.....	114	19,078	98,288,935	539,759,990	218,908,886	780,811,470
Metal fabricating (except machin- ery and transportation equip- ment).....	706	26,319	115,058,662	202,173,140	195,097,928	400,307,641
Machinery (except electrical).....	94	7,640	32,922,995	48,806,889	58,024,503	106,214,493
Transportation equipment.....	110	30,602	146,859,379	170,396,585	189,465,224	362,126,224
Electrical products.....	113	23,414	107,911,682	151,363,340	169,133,365	323,181,160
Non-metallic mineral products.....	393	12,088	50,322,765	73,863,613	111,379,695	198,467,376
Petroleum and coal products.....	15	2,937	17,838,596	296,197,909	82,920,307	381,058,528
Chemicals and chemical products.....	340	18,742	89,700,016	165,438,800	224,934,271	406,437,635
Miscellaneous manufacturing in- dustries.....	601	13,831	46,357,993	72,398,090	82,909,190	157,992,456
Ontario	12,081	591,501	2,597,408,249	6,337,292,819	5,429,853,032	11,957,329,553
Foods and beverages.....	2,658	77,094	298,377,801	1,256,939,689	759,458,660	2,034,875,886
Tobacco products.....	16	2,601	9,599,209	100,382,860	39,707,749	141,471,111
Rubber.....	48	12,768	59,305,860	112,911,142	129,666,869	252,479,238
Leather.....	200	13,700	42,500,108	77,036,614	65,342,790	141,457,860
Textiles.....	373	21,426	76,761,707	172,175,312	154,042,324	331,650,489
Knitting mills.....	131	8,637	23,973,624	46,907,706	42,051,299	90,125,132
Clothing.....	581	22,063	63,616,682	98,442,658	100,925,940	197,107,808
Wood.....	928	15,309	49,729,100	94,071,061	80,853,469	177,379,694
Furniture and fixtures.....	838	15,215	54,305,510	83,012,148	90,304,122	174,258,352
Paper and allied industries.....	260	35,873	174,050,748	396,935,976	356,988,054	787,841,748
Printing, publishing and allied in- dustries.....	1,439	37,044	173,373,400	147,175,393	305,244,924	455,058,523
Primary metal.....	203	53,022	281,501,656	831,387,102	744,709,876	1,624,729,132
Metal fabricating (except machin- ery and transportation equip- ment).....	1,427	53,109	240,226,697	420,116,666	432,411,655	864,992,249
Machinery (except electrical).....	332	30,810	146,798,738	234,281,241	245,306,158	485,330,297
Transportation equipment.....	283	57,708	295,074,983	881,994,654	534,747,656	1,414,269,695

¹ Confidential; included in "Miscellaneous manufacturing industries".

PROVINCIAL DISTRIBUTION OF MANUFACTURE PRODUCTION 671

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961—continued

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Ontario—concluded						
Electrical products.....	345	52,843	233,048,153	408,770,412	422,601,569	830,790,452
Non-metallic mineral products.....	519	19,546	87,809,980	120,566,553	183,869,975	324,616,852
Petroleum and coal products.....	24	5,835	36,686,624	291,617,304	90,581,230	386,442,003
Chemicals and chemical products.....	528	27,789	137,650,905	385,642,926	448,483,203	861,064,367
Miscellaneous manufacturing in- dustries.....	948	29,109	113,006,764	176,915,409	205,555,506	381,388,665
Manitoba	1,416	41,212	157,302,360	441,440,322	315,235,281	769,894,639
Foods and beverages.....	361	9,647	38,546,320	208,919,073	77,963,311	291,080,140
Rubber.....	1			1	1	1
Leather.....	17	537	1,465,211	3,546,035	1,996,899	5,564,524
Textiles.....	35	575	1,686,647	7,163,939	3,038,062	10,259,574
Knitting mills.....	1			1	1	1
Clothing.....	129	5,694	14,812,057	28,653,237	21,524,853	50,069,574
Wood.....	162	1,090	3,239,744	4,458,295	5,231,348	9,865,131
Furniture and fixtures.....	120	1,818	6,244,308	11,305,446	9,711,898	21,210,485
Paper and allied industries.....	23	1,553	6,505,912	18,211,780	19,448,868	39,039,648
Printing, publishing and allied in- dustries.....	194	3,808	15,363,312	11,796,836	27,118,678	39,176,722
Primary metal.....	13	2,507	12,121,620	26,317,048	40,284,106	71,192,218
Metal fabricating (except machin- ery and transportation equip- ment).....	115	3,266	14,282,490	21,029,189	22,384,493	43,585,895
Machinery (except electrical).....	31	1,082	4,152,547	7,895,167	7,741,700	15,400,590
Transportation equipment.....	32	5,176	21,642,010	25,615,721	27,840,597	54,133,253
Electrical products.....	19	816	2,921,209	6,783,970	6,415,126	13,295,917
Non-metallic mineral products.....	50	1,361	5,639,947	9,119,142	16,261,407	27,253,444
Petroleum and coal products.....	7	525	2,829,199	35,938,281	13,746,564	49,662,267
Chemicals and chemical products.....	33	701	2,606,968	9,061,187	8,681,836	17,614,307
Miscellaneous manufacturing in- dustries.....	75	1,056	3,242,859	5,625,976	5,845,535	11,490,950
Saskatchewan	675	12,149	48,947,762	218,815,222	120,971,938	344,432,203
Foods and beverages.....	221	5,664	22,128,026	119,093,054	52,226,508	173,687,054
Leather.....	1	1	1	1	1	1
Textiles.....	8	83	236,647	982,550	357,107	1,347,405
Clothing.....	7	232	740,104	1,415,494	1,407,492	2,858,409
Wood.....	116	852	2,415,744	5,660,793	3,972,568	9,649,065
Furniture and fixtures.....	33	84	246,148	252,294	372,052	634,782
Paper and allied industries.....	7	180	674,443	1,860,783	1,234,446	3,267,454
Printing, publishing and allied in- dustries.....	133	1,485	5,614,736	3,495,021	9,459,048	13,164,937
Primary metal.....	5	785	3,808,694	18,726,384	17,267,752	37,066,622
Metal fabricating (except machin- ery and transportation equip- ment).....	49	763	3,107,493	6,659,355	4,895,967	11,769,238
Machinery (except electrical).....	11	146	621,971	719,414	1,334,612	2,194,783
Transportation equipment.....	5	22	85,883	55,779	137,582	204,350
Electrical products.....	1	1	1	1	1	1
Non-metallic mineral products.....	35	560	2,362,858	4,605,606	7,064,260	12,467,537
Petroleum and coal products.....	10	1,002	5,846,134	51,898,339	18,536,535	70,116,290
Chemicals and chemical products.....	9	78	312,338	1,065,770	1,325,720	2,287,400
Miscellaneous manufacturing in- dustries.....	26	213	746,543	2,324,586	1,380,289	3,716,877
Alberta	1,569	37,921	157,348,484	568,732,861	346,731,838	933,826,476
Foods and beverages.....	435	11,605	45,883,605	284,112,013	95,173,816	383,367,444
Rubber.....	1	1	1	1	1	1
Leather.....	8	94	292,411	652,602	485,582	1,144,579
Textiles.....	18	403	1,702,889	4,754,590	2,950,251	7,776,842
Knitting mills.....	1	1	1	1	1	1
Clothing.....	18	1,239	3,302,964	6,330,025	6,660,568	12,775,165
Wood.....	299	3,366	10,001,915	20,413,328	17,299,386	38,785,137
Furniture and fixtures.....	94	926	3,222,663	5,213,503	5,355,089	10,615,187
Paper and allied industries.....	21	1,196	6,018,566	19,271,609	20,509,756	41,302,919
Printing, publishing and allied in- dustries.....	195	2,697	11,276,825	9,444,256	21,782,976	31,445,619

¹ Confidential; included in "Miscellaneous manufacturing industries".

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1961—concluded

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Alberta—concluded						
Primary metal.....	19	1,510	8,176,591	42,677,704	21,417,692	67,596,720
Metal fabricating (except machin- ery and transportation equip- ment).....	152	3,576	16,104,915	28,435,953	26,317,529	54,540,242
Machinery (except electrical).....	20	409	1,785,756	3,806,458	2,869,235	6,705,136
Transportation equipment.....	35	2,981	12,273,548	12,642,213	14,835,456	27,708,446
Electrical products.....	9	235	836,083	3,443,173	3,337,367	7,029,317
Non-metallic mineral products....	99	3,280	13,965,241	22,772,518	34,858,594	60,587,743
Petroleum and coal products.....	20	1,640	9,577,275	76,997,734	30,119,393	108,631,340
Chemicals and chemical products..	36	1,860	9,984,194	21,999,011	23,764,976	59,458,981
Miscellaneous manufacturing in- dustries.....	91	904	3,443,043	5,766,171	9,014,172	14,355,659
British Columbia	3,502	97,518	440,197,776	1,065,073,007	863,442,538	1,967,091,438
Foods and beverages.....	649	15,444	60,381,457	257,938,658	141,355,254	399,776,809
Rubber.....	6	65	301,299	212,414	457,596	690,152
Leather.....	15	238	704,114	994,996	1,123,421	2,135,212
Textiles.....	38	730	2,521,494	4,586,359	4,028,565	8,646,301
Knitting mills.....	4	303	826,700	1,225,807	1,669,621	2,865,757
Clothing.....	51	1,500	4,171,698	6,424,425	6,159,267	12,712,908
Wood.....	1,199	35,808	152,843,267	327,293,170	218,161,562	556,103,060
Furniture and fixtures.....	225	1,926	7,127,832	10,988,574	11,118,351	22,260,088
Paper and allied industries.....	43	11,122	61,229,049	125,629,715	182,960,503	323,142,939
Printing, publishing and allied in- dustries.....	306	4,732	22,875,638	14,392,050	40,917,812	55,819,360
Primary metal.....	41	6,641	35,373,558	108,034,239	66,500,898	177,725,907
Metal fabricating (except machin- ery and transportation equip- ment).....	326	4,959	23,354,551	39,819,137	42,033,863	83,835,316
Machinery (except electrical).....	49	1,619	7,922,204	7,691,313	12,432,773	20,926,759
Transportation equipment.....	125	4,433	21,428,216	19,250,643	33,906,298	53,468,404
Electrical products.....	33	1,028	4,590,720	9,132,905	8,337,666	17,419,196
Non-metallic mineral products....	117	1,832	9,012,412	11,977,470	17,520,832	32,224,249
Petroleum and coal products.....	11	1,360	8,330,833	82,718,605	26,141,972	112,638,455
Chemicals and chemical products..	100	2,517	11,996,249	31,836,964	40,689,226	71,861,311
Miscellaneous manufacturing in- dustries.....	164	1,261	5,206,485	4,925,563	7,927,058	12,839,255
Yukon and Northwest Territories	13	138	681,246	2,600,056	707,985	3,434,135
Foods and beverages.....	5	16	54,217	78,296	128,713	218,545
Wood.....	4	42	150,887	249,668	226,479	475,851
Printing, publishing and allied in- dustries.....	1	1	1	1	1	1
Petroleum and coal products.....	1	1	1	1	1	1
All other groups.....	4	80	476,142	2,272,092	352,793	2,739,739

¹ Confidential; included under "All other groups".

Section 2.—Manufacturing Industries in Urban Centres

Table 2 indicates the extent to which the manufacturing industries are concentrated in urban centres and shows, by province, the proportion of the selling value of factory shipments contributed by cities and towns having shipments of over \$1,000,000 each. In the more highly industrialized provinces of Ontario and Quebec such cities and towns accounted for 80 p.c. and 94 p.c., respectively, of the total manufactures of those provinces in 1960, compared with 82 p.c. and 94 p.c., respectively, in 1959. In the Atlantic Provinces and British Columbia, where sawmilling, fish products and dairying are leading industries, the proportions were 69 p.c. and 47 p.c., respectively in 1960, showing little change compared with the previous year. In the Prairie Provinces, manufacturing is confined largely to a few urban centres. Although there has been some recent tendency to establish new industry

in smaller urban centres, for Canada as a whole the percentage of manufactures accounted for by urban centres having shipments of over \$1,000,000 was 80.5 in 1955 and 81.1 in 1960.

2.—Urban Centres, Each with Selling Value of Factory Shipments of Over \$1,000,000, Number of Establishments and Total Shipments in these Centres as a Percentage of the Provincial Total, by Province, 1960.

Province or Territory	Urban Centres with Shipments of Over \$1,000,000 Each	Establishments Reporting in Urban Centres with Shipments of Over \$1,000,000	Shipments of Urban Centres having \$1,000,000 or Over	Total Shipments of Each Province	Shipments of Urban Centres having \$1,000,000 or Over as a Percentage of Total Shipments in the Province
	No.	No.	\$	\$	
Newfoundland.....	7	120	84,815,319	129,284,578	65.6
Prince Edward Island.....	4	61	21,876,943	30,231,361	72.3
Nova Scotia.....	27	456	247,271,477	406,182,088	60.8
New Brunswick.....	18	330	299,563,309	377,110,146	79.4
Quebec.....	207	8,370	6,798,173,718	7,206,096,003	94.3
Ontario.....	190	8,885	9,351,940,361	11,685,675,652	80.0
Manitoba.....	14	1,090	631,565,455	738,457,346	85.5
Saskatchewan.....	13	463	288,412,647	344,773,261	83.6
Alberta.....	17	1,026	623,166,176	889,657,800	70.0
British Columbia.....	34	2,061	911,781,909	1,936,917,630	47.1
Yukon and Northwest Territories.	—	—	—	3,071,218	—
Canada.....	531	22,862	19,258,567,314	23,747,457,083	81.1

3.—Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-60

City and Year	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Montreal, Que..... 1939	2,501	105,315	114,602,118	254,188,246	..	483,246,583
1944	3,109	185,708	308,396,358	650,618,563	..	1,215,988,014
1949	4,136	184,779	399,943,526	847,444,669	..	1,596,713,694
1953	4,398	193,129	544,284,191	1,067,911,378	..	2,042,662,785
1955	4,379	176,998	529,339,811	1,021,717,306	..	1,963,367,235
1957	4,268	183,996	611,657,486	1,214,443,559	..	2,288,258,169
1959	3,951	173,279	626,970,086	1,231,974,393	1,086,276,852	2,334,129,536
1960	3,996	171,621	643,387,247	1,224,513,359	1,118,350,304	2,349,783,042
Toronto, Ont..... 1939	2,885	98,702	122,553,435	240,532,281	..	482,532,331
1944	3,344	154,538	260,776,613	513,429,109	..	1,020,345,353
1949	4,005	158,562	368,510,524	837,148,440	..	1,579,186,450
1953	3,781	154,251	478,086,271	980,873,073	..	1,875,747,249
1955	3,497	134,235	448,775,761	916,493,539	..	1,732,099,123
1957	3,312	132,356	482,758,834	961,000,335	..	1,832,080,726
1959	2,890	123,963	503,765,998	1,008,784,582	852,074,583	1,867,389,948
1960	2,971	120,335	506,872,752	999,132,659	851,461,939	1,872,972,293
Hamilton, Ont..... 1939	461	31,512	39,563,423	70,829,034	..	152,746,340
1944	480	53,500	94,982,915	171,117,467	..	363,033,672
1949	546	54,665	137,641,333	285,180,403	..	563,982,920
1953	566	60,451	201,515,979	385,515,852	..	824,407,315
1955	588	55,202	200,311,361	395,047,070	..	844,835,085
1957	562	57,095	237,883,530	502,608,132	..	1,031,430,829
1959	506	52,820	244,629,848	524,165,589	556,389,853	1,088,875,035
1960	534	50,850	243,415,180	494,976,608	516,552,881	1,031,197,944

For footnote, see end of table, p. 674.

3.—Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-60—concluded

City and Year	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Vancouver, B.C.....1939	829	17,957	22,382,192	56,565,511	..	101,267,243
1944	933	43,473	79,141,407	142,416,371	..	289,390,718
1949	1,225	33,536	78,793,345	204,642,985	..	358,620,526
1953	1,316	33,822	108,896,725	255,906,780	..	448,591,543
1955	1,330	34,683	120,488,180	276,666,483	..	499,181,449
1957	1,280	35,666	138,199,452	305,719,965	..	540,766,123
1959	1,173	32,911	139,700,859	277,475,428	232,239,093	516,907,552
1960	1,189	32,059	142,578,640	275,445,595	229,474,007	516,525,735
Windsor, Ont.....1939	222	17,729	25,938,890	63,907,106	..	122,474,320
1944	231	35,912	80,867,573	232,102,240	..	387,603,874
1949	283	34,591	94,304,627	271,392,923	..	494,162,203
1953	338	37,514	140,481,193	402,209,586	..	682,273,319
1955	334	25,654	101,810,378	186,275,443	..	374,512,418
1957	318	29,377	122,169,670	290,073,160	..	533,531,623
1959	280	23,355	115,427,371	221,182,915	220,324,726	439,252,612
1960	287	22,152	112,225,758	244,010,059	214,719,901	467,675,624
Winnipeg, Man.....1939	648	17,571	20,717,273	44,873,043	..	81,024,272
1944	686	25,870	35,824,299	119,917,745	..	198,169,626
1949	860	28,687	58,604,162	143,827,270	..	255,006,806
1953	860	28,230	76,008,218	156,860,845	..	300,186,774
1955	873	26,392	75,281,647	152,575,494	..	291,094,611
1957	856	27,039	83,809,725	166,092,377	..	314,229,185
1959	794	25,864	88,968,328	172,048,819	165,938,159	340,717,738
1960	767	24,689	87,508,238	166,238,709	165,509,208	334,895,200

¹ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 645.

4.—Principal Statistics of the Manufacturing Industries in the Six Leading Manufacturing Metropolitan Areas, 1960 and 1961

Year and Metropolitan Area	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
1960						
Montreal.....	5,024	245,396	970,610,851	55,501,960	2,251,703,689	4,083,057,688
Toronto.....	4,741	206,434	879,338,328	37,937,529	1,712,074,602	3,342,137,321
Hamilton.....	695	55,613	260,956,448	24,622,522	533,748,940	1,104,903,463
Vancouver.....	1,797	52,867	235,338,997	16,262,572	528,733,777	968,388,246
Winnipeg.....	1,017	36,307	133,475,732	8,041,629	342,710,516	600,225,572
Windsor.....	380	23,770	118,757,761	6,137,704	258,780,190	494,784,271
1961						
Toronto.....	4,982	224,343	981,787,133	46,782,414	2,199,487,455	4,118,709,404
Montreal.....	5,054	243,033	980,577,238	43,525,985	2,199,262,928	4,058,958,750
Hamilton.....	677	54,553	266,129,894	16,565,750	560,013,203	1,168,600,255
Vancouver.....	1,747	51,371	234,882,479	15,310,164	560,187,270	980,355,187
Winnipeg.....	984	35,554	135,606,485	8,426,101	377,705,676	634,968,857
Windsor.....	380	22,074	113,112,695	6,120,021	239,171,356	447,716,317

5.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$10,000,000 or Over and with Three or More Establishments, 1960

NOTE.—Statistics for urban centres with three or more establishments cannot be published when one establishment has 75 p.c. or two establishments 90 p.c. of the total value of shipments.

Province and Municipality	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland—						
St. John's.....	85	2,565	7,842,917	12,606,049	17,088,653	29,917,507
Prince Edward Island—						
Charlottetown.....	34	697	2,140,585	9,797,272	4,501,664	14,469,772
Nova Scotia—						
Amherst.....	26	1,019	3,377,712	4,523,406	6,188,674	11,060,680
Halifax.....	105	4,264	13,595,530	29,633,737	29,459,919	60,137,381
Trenton.....	10	828	3,290,740	7,212,640	4,523,551	11,966,648
Truro.....	29	1,129	2,557,920	5,491,567	5,136,380	10,794,563
New Brunswick—						
Fredericton.....	38	1,067	3,192,826	5,445,514	5,801,884	11,474,014
Lancaster.....	8	980	3,949,079	12,415,970	11,674,669	24,647,783
Moncton.....	61	2,566	9,360,317	27,140,038	14,263,071	42,018,022
Saint John.....	91	3,372	11,374,732	68,334,704	36,237,218	102,434,819
Quebec—						
Acton Vale.....	14	1,295	2,945,120	7,993,468	5,208,346	13,420,929
Beauharnois.....	20	1,766	7,813,199	15,709,953	18,363,920	38,225,769
Cap de la Madeleine.....	43	2,747	8,838,524	27,167,612	21,306,376	50,013,653
Cowansville.....	15	1,652	4,988,464	9,425,229	9,750,805	19,256,328
Drummondville.....	68	6,014	19,429,842	35,902,866	42,627,514	80,542,279
Granby.....	24	1,081	3,257,245	6,190,776	6,003,831	12,563,805
Farnham.....	84	7,176	22,931,334	50,902,454	45,546,311	96,885,870
Garnby.....	20	2,336	8,421,254	13,586,374	16,350,999	31,406,809
Hull.....	32	3,116	12,603,795	28,642,335	24,178,178	54,219,622
Huntingdon.....	15	641	2,355,109	6,909,165	4,054,853	11,173,277
Jacques Cartier.....	31	1,130	4,050,807	7,829,510	8,066,112	16,214,523
Joliette.....	56	2,219	6,795,651	15,535,521	13,617,175	29,820,762
Lachine.....	87	12,167	55,159,765	94,630,161	90,459,094	188,144,952
LaSalle.....	57	5,314	23,779,969	70,924,266	78,193,476	151,896,573
Longueuil.....	31	3,399	15,008,478	15,001,209	17,650,562	33,781,462
Louiseville.....	21	1,018	2,650,515	4,747,668	5,467,533	10,560,849
Magog.....	35	2,469	7,412,009	32,264,183	14,544,374	46,921,875
Marieville.....	18	558	1,494,478	7,550,805	2,932,626	10,664,353
Montmagny.....	37	1,273	3,774,025	9,647,921	7,647,283	17,206,912
Montreal.....	3,996	171,621	643,387,247	1,224,513,359	1,118,350,304	2,349,783,042
Montreal East.....	42	6,927	34,301,216	480,943,803	118,906,795	618,042,404
Montreal North.....	78	1,379	5,385,046	10,612,972	9,660,443	20,526,857
Mount Royal.....	56	6,294	26,718,516	80,175,444	53,847,054	134,503,223
Outremont.....	85	2,864	10,427,175	23,277,353	20,016,427	43,588,651
Plessisville.....	27	929	3,391,222	6,097,669	5,620,826	11,786,394
Pointe aux Trembles.....	17	1,121	4,510,848	36,760,743	13,751,062	52,602,542
Pointe Claire.....	13	694	2,696,648	8,282,403	11,013,821	19,411,148
Princeville.....	15	575	1,676,893	7,727,666	3,543,812	11,225,975
Quebec.....	412	14,696	50,962,007	107,252,239	106,179,632	218,453,875
St. Hyacinthe.....	81	4,005	11,358,894	30,703,108	24,579,003	55,868,212
St. Jean.....	78	4,575	16,632,228	34,201,885	30,033,106	67,118,467
St. Jérôme.....	69	3,391	10,496,215	20,088,717	18,844,913	39,464,371
St. Lambert.....	27	987	3,206,970	6,090,711	5,668,013	11,815,824
St. Laurent.....	104	18,203	89,147,618	96,354,222	149,550,687	247,635,747
Ste. Marie.....	21	1,050	3,033,756	7,562,663	8,004,017	15,662,979
St. Michel.....	121	2,702	10,206,399	20,527,111	23,508,130	45,059,134
Ste. Thérèse.....	33	1,190	3,982,730	8,508,938	7,681,133	16,034,483
Shawinigan.....	45	5,645	26,827,864	53,019,675	61,343,286	123,397,963
Sherbrooke.....	125	7,286	23,525,858	52,069,846	49,037,346	103,033,083
Trois Rivières.....	89	7,981	31,782,632	59,774,109	66,035,085	134,822,735
Valleyfield.....	47	2,985	10,046,337	22,762,743	25,042,039	49,241,636
Verdun.....	73	1,750	5,302,904	7,768,142	9,020,583	16,999,955
Victoriaville.....	59	2,479	6,780,531	13,534,084	11,161,291	25,250,477
Westmount.....	43	1,861	7,885,032	12,446,299	19,286,334	31,866,073
Ontario—						
Acton.....	19	883	3,119,603	7,898,677	5,320,452	13,413,461
Ajax.....	39	1,788	6,948,357	16,618,047	13,076,818	30,165,228
Amnrior.....	18	907	3,234,153	3,828,285	7,716,823	11,735,102

5.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$10,000,000 or Over and with Three or More Establishments, 1960—continued

Province and Municipality	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Ontario—concluded						
Aurora.....	17	993	3,730,067	10,362,987	11,676,716	22,445,209
Barrie.....	43	2,068	8,159,056	19,524,453	19,098,769	38,476,826
Belleville.....	65	3,372	13,971,381	19,458,301	30,367,895	48,957,924
Brampton.....	54	2,249	8,934,599	16,219,557	17,424,011	34,296,463
Brantford.....	171	10,118	40,089,235	78,582,641	73,692,897	158,762,435
Brockville.....	44	3,028	12,093,345	38,647,497	27,057,730	65,747,043
Burlington.....	51	1,988	7,775,313	20,902,157	15,894,635	37,439,774
Chatham.....	76	3,672	15,489,006	79,197,504	33,743,549	114,362,956
Cobourg.....	33	1,214	4,863,128	11,489,594	16,085,153	27,744,022
Collingwood.....	25	1,535	5,032,323	9,247,127	8,469,593	17,965,474
Cornwall.....	54	5,043	21,937,673	37,102,607	42,337,131	85,030,551
Dundas.....	38	1,302	4,626,126	6,900,051	5,146,360	11,858,289
Dunnville.....	15	1,236	2,951,034	7,581,869	6,350,720	14,238,723
Elnora.....	22	749	2,746,300	8,525,561	11,073,856	19,705,610
Fort Erie.....	28	897	3,685,064	5,622,868	33,643,683	66,656,125
Fort William.....	66	2,696	12,811,274	28,193,505	53,778,155	102,950,395
Galt.....	99	7,150	27,587,525	48,888,160	5,499,012	11,274,491
Gananoque.....	16	848	3,392,970	5,795,420	8,015,152	20,103,781
Georgetown.....	24	1,365	5,786,833	11,927,488	47,571,558	92,226,107
Guelph.....	113	6,456	25,393,291	44,287,049	516,552,881	1,031,197,944
Hamilton.....	534	50,850	243,415,160	494,976,608	4,590,610	10,728,554
Hanover.....	24	1,012	3,014,043	6,034,517	7,561,880	16,974,792
Hespeler.....	18	1,168	3,988,410	9,683,021	7,993,039	21,713,232
Ingersoll.....	27	983	3,564,229	12,795,483	55,836,940	107,409,847
Kingston.....	71	5,678	24,686,632	47,644,783	109,920,200	241,096,659
Kitchener.....	201	16,001	61,499,418	131,026,629	44,636,705	99,780,727
Leaside.....	48	6,725	29,412,442	54,405,984	11,143,695	20,392,106
Lindsay.....	39	1,792	5,747,542	8,950,234	123,780,037	245,133,807
London.....	288	15,417	62,517,813	117,030,162	11,328,122	22,358,260
Long Branch.....	24	1,034	4,239,431	10,534,391	7,517,764	17,862,639
Midland.....	28	1,257	3,887,866	5,867,679	7,030,489	13,171,434
Milton.....	17	730	3,279,139	9,384,014	10,081,449	19,482,032
Mimico.....	39	1,189	4,711,551	7,556,248	7,993,186	16,086,602
Newmarket.....	24	1,160	4,134,159	92,727,381	74,267,593	171,621,361
New Toronto.....	37	6,817	34,409,933	29,401,381	30,629,999	62,853,979
Niagara Falls.....	75	3,737	16,207,057	11,746,733	13,424,101	25,813,953
Orillia.....	58	2,329	8,317,574	59,380,796	12,247,564	137,479,803
Ottawa.....	238	9,275	37,249,015	10,753,241	5,698,768	23,167,642
Owen Sound.....	51	2,136	7,342,139	6,930,518	9,522,271	12,477,876
Paris.....	28	1,140	3,640,342	8,832,032	5,183,029	10,021,461
Pembroke.....	30	1,429	4,670,690	4,987,827	68,998,490	130,125,709
Perth.....	27	863	2,583,217	58,385,321	24,861,599	50,100,812
Peterborough.....	86	8,649	41,529,577	23,465,267	15,423,757	34,309,870
Port Arthur.....	59	2,392	10,929,679	18,759,800	54,942,450	106,635,215
Preston.....	47	2,738	10,066,946	7,260,146	10,945,582	19,043,846
St. Catharines.....	136	7,429	33,405,990	49,065,455	19,836,363	38,462,128
St. Mary's.....	14	718	2,816,366	17,384,930	111,883,639	336,773,691
St. Thomas.....	60	2,418	9,244,806	82,511,803	82,591,055	170,038,097
Sarnia.....	47	6,897	38,519,848	24,172,200	17,685,664	42,337,916
Sault Ste. Marie.....	45	8,828	47,962,643	4,387,864	20,396,511	12,228,558
Simcoe.....	33	1,418	5,583,536	25,826,903	6,751,541	16,379,261
Smith's Falls.....	32	822	2,706,588	4,675,015	5,958,784	10,934,389
Stratford.....	74	3,305	11,548,363	7,862,606	6,761,541	14,821,312
Streetsville.....	18	705	2,886,327	12,848,587	12,025,439	27,055,820
Swansea.....	17	856	3,947,837	17,673,586	6,185,923	24,336,447
Thornhill.....	18	1,464	6,678,610	999,132,659	851,461,939	1,872,972,293
Tillsonburg.....	31	1,144	3,611,598	11,214,458	14,705,146	25,910,892
Toronto.....	2,971	120,335	506,872,752	8,138,997	11,269,070	20,684,391
Trenton.....	28	1,604	5,670,870	22,356,116	44,269,200	61,408,591
Wallaceburg.....	28	1,767	6,844,197	48,996,108	35,723,866	85,545,705
Waterloo.....	68	3,127	11,997,815	21,256,313	17,109,668	40,417,583
Welland.....	51	3,958	17,236,241	244,010,059	214,719,901	467,675,624
Weston.....	69	2,702	10,684,418	41,995,270	27,720,820	71,399,543
Windsor.....	287	22,152	112,225,758			
Woodstock.....	62	4,113	15,932,349			
Manitoba—						
Brandon.....	41	778	2,757,680	9,347,112	4,575,409	14,131,439
St. Boniface.....	86	5,017	21,136,140	124,744,591	39,567,291	167,756,877
St. James.....	72	2,988	11,087,441	19,608,761	20,973,269	41,008,810
Winnipeg.....	767	24,689	87,508,238	166,238,709	165,509,208	334,895,200

5.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$10,000,000 or Over and with Three or More Establishments, 1960—concluded

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Saskatchewan—						
Moose Jaw.....	47	1,347	5,564,694	34,629,771	12,948,482	48,077,338
Prince Albert.....	31	880	3,405,394	13,514,435	8,588,470	22,236,435
Regina.....	133	3,671	15,248,118	57,578,818	37,455,897	99,200,024
Saskatoon.....	141	3,555	14,386,658	61,959,597	30,778,142	94,416,793
Alberta—						
Calgary.....	366	10,673	44,856,584	150,452,489	93,847,676	246,975,621
Edmonton.....	423	13,261	51,650,995	162,107,927	100,128,089	264,484,111
Lethbridge.....	62	1,338	4,847,760	12,252,122	13,112,636	24,523,017
Medicine Hat.....	43	1,277	4,751,734	18,054,117	14,908,967	32,973,341
British Columbia—						
Kelowna.....	34	949	3,319,069	6,959,623	5,746,275	12,348,191
New Westminster.....	102	5,707	24,784,735	54,877,046	49,977,873	107,294,979
North Vancouver.....	69	2,121	10,009,467	12,372,617	18,369,322	32,816,643
Port Moody.....	7	725	3,454,379	19,245,290	8,633,655	30,160,173
Prince George.....	59	809	3,207,369	10,648,718	4,814,906	15,662,408
Vancouver.....	1,189	32,059	142,578,640	275,445,595	229,474,007	516,525,735
Victoria.....	175	3,850	16,852,136	26,863,203	29,704,212	57,417,980

PART IV.—FEDERAL AIDS TO DOMESTIC INDUSTRY

The Department of Industry.—In 1963 legislation was introduced into Parliament to establish the Department of Industry. On July 22, 1963, Royal Assent was given to the Department of Industry Act and, with the proclamation on July 25, 1963, the new Department came into existence. Under the Act, the duties, powers and functions of the Minister of Industry are "to include all matters relating to manufacturing industries in Canada over which the Parliament of Canada has jurisdiction, not by law assigned to any other branch or agency of the Government of Canada". The Department is responsible for promoting the establishment, growth, efficiency and improvement of manufacturing industries in Canada through the development and implementation of programs to assist manufacturers to adjust to changing market conditions, to help them develop new lines of production and enter new markets, and to promote greater industrial research and the utilization of technological advances within Canadian industry.

The Area Development Agency—part of the Department of Industry—is responsible for undertaking research and investigations into the means of increasing employment and income in designated areas, and the development and carrying out of programs to this end. The Agency administers the various Federal Government incentive measures intended to foster the economic growth of the designated areas.

In October 1963, branches of the Domestic Commerce Service of the Department of Trade and Commerce were incorporated into the Department of Industry. The functions of the Industrial Promotion Branch and the Industrial Design Branch were continued as part of the program of the new Department. The functions of the Small Business Branch were absorbed elsewhere and the special capital cost allowance program for new products came to an end on Dec. 31, 1962, eliminating the need for its administration.

Industrial Promotion.—The industrial promotion activities of the Department of Industry are designed to assist manufacturers and processors to expand operations in Canada. In pursuit of this objective, close liaison is maintained with other federal agencies, with provincial, regional and municipal bodies, and with private development agencies and business organizations and associations. Information on production and market

opportunities within the domestic market is made available to Canadian manufacturers; areas of opportunity for industrial expansion are investigated and import surveys undertaken to obtain information about Canadian market possibilities. In addition, businessmen are provided with information on such matters as licensing arrangement, taxation, tariffs, financing and government rules and regulations.

Product Design.—The National Design Branch of the Department of Industry is the administrative arm of the National Design Council. Jointly, the Council and the Branch have formulated a program and initiated various projects to assist Canadian industry in all areas of design and to create throughout the business community and among the general public a greater awareness of the importance of design in the successful making, marketing and, particularly, export of goods. A national design index illustrating and describing products of superior Canadian design is maintained. This index is a reference catalogue for buyers and the general public and is available in Canada and various centres abroad. National and regional exhibitions are held in co-operation with industry to display products from the index. A design centre, as a permanent place of exhibition and reference, will be opened in the winter of 1963-64.

The Branch organizes seminars and workshops where manufacturers and designers may meet to discuss design and its relevance to particular products and industries. Scholarships and grants for institutional and specialized training in design and for research in industrial design are awarded on a competitive basis and are tenable in Canada and abroad. Studies are conducted to ascertain the present and emergent needs of industry in the design field and the facilities, processes and techniques available to the manufacturer. A national register of practising designers and design consultants has been installed by the Branch so that manufacturers seeking assistance in product development and in packaging may receive expert help. A reference centre, a visual aids library and an information service are being established to cover the whole field of industrial design.

The Economic Council of Canada.—This corporation, in course of being established during the autumn of 1963, by Act of Parliament (SC 1963, c. 11) assented to on Aug. 2, 1963, will consist of a full-time chairman and two full-time directors to hold office for a term not exceeding seven years and not more than 25 other members to be appointed by the Governor in Council for a term of three years and to serve without remuneration except for travelling and living expenses.

The duties of the Council are: "to advise and recommend to the Minister" (President of the Queen's Privy Council for Canada) "how Canada can achieve the highest possible levels of employment and efficient production in order that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; . . . conduct such studies, inquiries and other undertakings as may be necessary with respect [thereto] . . . , and . . . report to, advise or make recommendations to the Minister with respect thereto, as the circumstances require". In addition, the Council is required under its Act to assume the duties of the former National Productivity Council (whose Act, SC 1960-61, c. 4, is thereby repealed) having to do with "promoting and expediting advances in efficiency of production in all sectors of the economy, [particularly] . . . the development of improved production and distribution methods, . . . improved management techniques, the maintenance of good human relations in industry, the use of training programs at all levels of industry, and . . . retraining programs to meet changing manpower requirements, the extension of industrial research programs in plants and industries . . . , the dissemination of technical information. . . ."

For appointments to the Economic Council, up to Nov. 15, 1963, see Register of Official Appointments, Chapter XXVI.

CHAPTER XV.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity—value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building, construction of dwelling units and housing statistics of the 1961 Census are covered in Section 3.

Section 1.—Capital Expenditures on Construction and on Machinery and Equipment

Capital expenditures† in all sectors of the economy amounted to \$8,738,000,000 in 1962, an increase of 6.9 p.c. over the 1961 total of \$8,172,000,000. The over-all increase resulted from a 9.1-p.c. rise in the purchase of machinery and equipment and a 5.9-p.c. increase in construction expenditures.

Capital outlays in Canada increased each year throughout most of the period after 1946 and reached a peak in 1957. In subsequent years the level of capital spending kept declining slightly until 1962 when it exceeded the previous record of 1957. However, in constant (1957) dollars, the total 1962 capital program was still 7 p.c. below the level of 1957, declines having occurred in volume each year following 1957. A high proportion of Canada's gross national product is still being devoted to the expansion, modernization or renewal of the nation's production facilities, although this proportion has been declining in recent years.

* Except where otherwise noted, prepared in the Planning and Development Section, Business Finance Division, Dominion Bureau of Statistics.

† Capital expenditure figures for 1961 and earlier years are final and those for 1962 are preliminary and subject to revision at a later date. Capital expenditures for 1961 and 1962, as well as intentions for 1963, appear in greater detail in the publication *Private and Public Investment in Canada, Outlook 1963*, available from the Queen's Printer (Catalogue No. C51-1/1963).

1.—Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1957) Dollars, 1953-62

NOTE.—Actual expenditures 1953-61; preliminary actual 1962.

Year	Capital Expenditures						Total Expenditure as Percentage of Gross National Product	
	Construction		Machinery and Equipment		Totals			
	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p.c.	p.c.
1953.....	3,756	4,174	2,220	2,550	5,976	6,724	23.9	24.4
1954.....	3,737	4,149	1,984	2,245	5,721	6,394	23.0	23.9
1955.....	4,169	4,512	2,075	2,305	6,244	6,817	23.0	23.5
1956.....	5,273	5,445	2,761	2,888	8,034	8,333	26.3	26.4
1957.....	5,784	5,784	2,933	2,933	8,717	8,717	27.3	27.3
1958.....	5,830	5,865	2,534	2,467	8,364	8,332	25.4	25.9
1959.....	5,709	5,557	2,708	2,590	8,417	8,147	24.1 ^r	24.4 ^r
1960.....	5,453	5,248	2,809	2,636	8,262	7,884	22.8 ^r	23.1 ^r
1961.....	5,518	5,353	2,654	2,454	8,172	7,807	21.8	22.3
1962.....	5,842	5,506	2,896	2,607	8,738	8,113	21.6	21.8

Table 2 shows the extent of the emphasis on housing and non-residential construction in 1962 as compared with the two previous years.

2.—Capital Expenditures and Percentage Distribution, by Type, 1960-62

NOTE.—Actual expenditures 1960 and 1961; preliminary actual 1962.

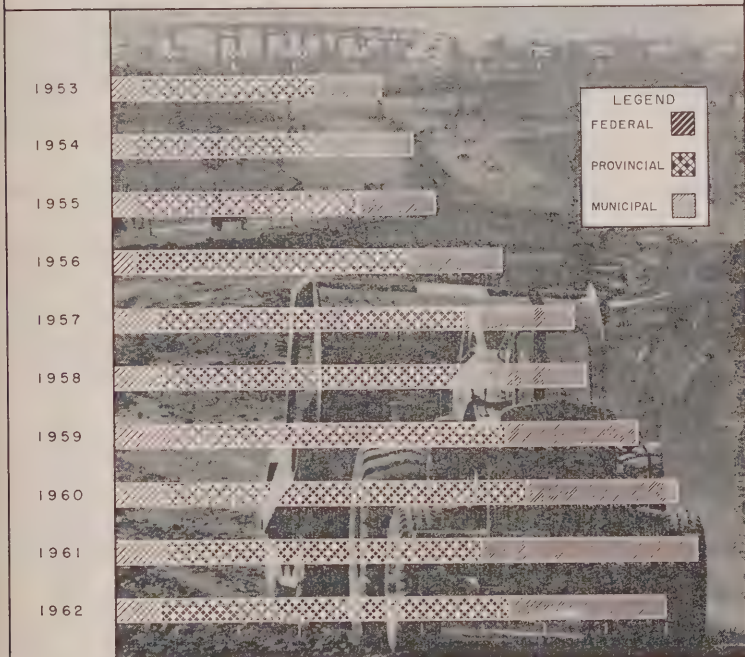
Type	Capital Expenditures			Distribution		
	1960	1961	1962	1960	1961	1962
	\$'000,000	\$'000,000	\$'000,000	p.c.	p.c.	p.c.
Construction.....	5,453	5,518	5,842	66.0	67.5	66.9
Housing.....	1,456	1,467	1,587	17.6	17.9	18.2
Non-residential.....	3,997	4,051	4,255	48.4	49.6	48.7
Machinery and Equipment.....	2,809	2,654	2,896	34.0	32.5	33.1
Totals.....	8,262	8,172	8,738	100.0	100.0	100.0

In 1962, capital outlays in the mining industry totalled \$478,000,000, an increase of \$29,000,000 over the previous year. A considerable increase in outlays in iron mining facilities in the Quebec-Labrador area only partially offset the substantial decline in expenditure on natural gas processing plants as a result of the near completion in 1961 of the capital program associated with the Alberta-California project for the export of gas.

Expenditures on new manufacturing facilities rose to \$1,231,000,000, the increase of \$146,000,000 over 1961 being accounted for mainly by increased outlays by the primary metals industry which rose from \$126,500,000 to \$212,700,000. Expenditures by the petroleum and coal products industry were also considerably higher but reduction was experienced by the chemical products industry.

Capital expenditures for utilities—including transportation, communication and storage facilities, and public utilities such as gas, water and electricity—declined from \$1,698,000,000 in 1961 to \$1,632,700,000 in 1962. This decrease reflects the completion of major oil and gas pipeline projects in Alberta and British Columbia, only partially offset by higher outlays on telephone systems.

GOVERNMENT EXPENDITURES ON ROADS,
HIGHWAYS, AERODROMES AND BRIDGES
1953-62



The trade sector of the economy—consisting of wholesale and retail firms and automobile service stations owned by Canada's integrated petroleum companies—made capital outlays of \$304,400,000 in 1962, slightly less than in the previous year. A substantial decline among wholesale firms was offset by an increase recorded by department stores; the main strength in the latter originated in increased activities in "discount" department stores, a recent development in retail merchandising.

Institutional services—including hospitals, schools, universities, churches and welfare institutions—recorded an advance of \$191,400,000 in capital outlays in 1962 over the \$616,400,000 expended in 1961. Most of the increase was spent on additional school facilities, mainly as a result of the large program of technical school construction being assisted by the Federal Government.

Capital outlays by government departments at all levels increased slightly from \$1,247,100,000 in 1961 to \$1,309,700,000 in 1962. Government departments as defined for capital expenditures purposes include that part of government activity (excluding institutions) generally dependent on tax revenue for financial support as opposed to activities directly producing revenues on a service-rendered basis; one of the major activities of government involving expenditures by federal, provincial and municipal governments is

the road, highway and bridge program. Spending by provincial governments reached \$552,200,000, an increase of \$60,000,000 over 1961, and spending by municipal governments increased by \$21,800,000 to total \$407,200,400. On the other hand, the Federal Government spent \$19,300,000 less than the 1961 total of \$369,600,000, reflecting in part the implementation of the austerity program.

Capital spending in Canada as a whole in 1962 was 6.9 p.c. higher than in 1961 but there was considerable variation in the spending of the different provinces. Newfoundland experienced an increase of 48.4 p.c. as a result of heavier expenditures by iron mining companies in Labrador; Prince Edward Island, Saskatchewan, Ontario and Quebec recorded increases above the national rate at 13.2 p.c., 12.1 p.c., 9.2 p.c. and 7.9 p.c., respectively; in Manitoba, British Columbia and New Brunswick the increases were more modest at 6.0 p.c., 2.6 p.c. and 0.6 p.c.; and Nova Scotia and Alberta showed declines of 2.7 p.c. and 4.3 p.c., respectively.

3.—Summary of Capital and Repair Expenditures, by Economic Sector, 1961 and 1962

NOTE.—Actual expenditures 1961; preliminary actual 1962.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
Agriculture ¹ and fishing.....1961	168	408	576	65	141	206	233	549	782
.....1962	183	465	648	70	150	220	253	615	868
Forestry.....1961	28	22	50	18	28	46	46	50	96
.....1962	28	25	53	16	30	46	44	55	99
Mining, quarrying and oil wells.....1961	362	87	449	26	96	122	388	183	571
.....1962	344	134	478	31	103	134	375	237	612
Manufacturing.....1961	279	806	1,085	124	558	682	403	1,364	1,767
.....1962	346	885	1,231	122	588	710	468	1,473	1,941
Utilities.....1961	1,088	610	1,698	277	446	723	1,365	1,056	2,421
.....1962	1,013	620	1,633	276	458	734	1,289	1,078	2,367
Construction.....1961	14	122	136	4	134	138	18	256	274
.....1962	15	128	143	4	141	145	19	269	288
Housing.....1961	1,467	—	1,467	484	—	484	1,951	—	1,951
.....1962	1,587	—	1,587	513	—	513	2,100	—	2,100
Trade (wholesale and retail).....1961	127	180	307	39	40	79	166	220	386
.....1962	122	183	305	35	38	73	157	221	378
Finance, insurance and real estate.....1961	268	44	312	17	4	21	285	48	333
.....1962	260	48	308	18	5	23	278	53	331
Commercial services.....1961	56	172	228	14	48	62	70	220	290
.....1962	62	172	234	10	48	58	72	220	292
Institutional services.....1961	536	81	617	64	14	78	600	95	695
.....1962	701	107	808	63	14	77	764	121	885
Government departments....1961	1,125	122	1,247	323	57	380	1,448	179	1,627
.....1962	1,181	129	1,310	326	56	382	1,507	185	1,692
Totals.....1961	5,518	2,654	8,172	1,455	1,566	3,021	6,973	4,220	11,193
.....1962	5,842	2,896	8,738	1,484	1,631	3,115	7,326	4,527	11,853

¹ Estimates for agriculture have been revised on the basis of the 1958 Farm Income and Expenditure Survey and the 1961 Census of Agriculture, and are not comparable with data for years prior to 1961.

Details of some of the above economic sectors are given in Table 4. The value of construction work performed, together with statistics of contracts awarded and building permits issued in recent years, is covered in Section 2 of this Chapter. Housing is treated separately in Section 3.

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962

NOTE.—Actual expenditures 1961; preliminary actual 1962.
(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
MANUFACTURING									
Foods and beverages.....1961	58.1	106.9	165.0	14.1	61.7	75.8	72.2	168.6	240.8
.....1962	55.2	98.2	153.4	14.7	59.1	73.8	69.9	157.3	227.2
Tobacco products.....1961	1.7	6.4	8.1	1.3	3.1	4.4	3.0	9.5	12.5
.....1962	0.4	4.4	4.8	0.5	2.2	2.7	0.9	6.6	7.5
Rubber.....1961	2.6	13.8	16.4	0.9	8.3	9.2	3.5	22.1	25.6
.....1962	1.7	17.3	19.0	0.9	7.8	8.7	2.6	25.1	27.7
Leather.....1961	0.6	3.2	3.8	0.6	2.6	3.2	1.2	5.8	7.0
.....1962	0.6	3.1	3.7	0.6	2.7	3.3	1.2	5.8	7.0
Textile.....1961	5.5	22.0	27.5	3.8	20.3	24.1	9.3	42.3	51.6
.....1962	6.5	29.6	36.1	3.9	21.7	25.6	10.4	51.3	61.7
Clothing and knitting mills...1961	3.0	10.2	13.2	1.1	4.4	5.5	4.1	14.6	18.7
.....1962	1.9	11.7	13.6	1.5	4.8	6.3	3.4	16.5	19.9
Wood.....1961	13.6	31.0	44.6	5.8	29.6	35.4	19.4	60.6	80.0
.....1962	10.4	25.5	35.9	5.7	31.0	36.7	16.1	56.5	72.6
Furniture and fixtures.....1961	1.2	3.5	4.7	1.0	2.4	3.4	2.2	5.9	8.1
.....1962	1.9	3.9	5.8	1.1	2.4	3.5	3.0	6.3	9.3
Paper and allied industries...1961	37.1	123.9	161.0	9.2	101.8	111.0	46.3	225.7	272.0
.....1962	39.2	125.3	164.5	10.7	107.2	117.9	49.9	232.5	282.4
Printing, publishing and allied industries.....1961	6.4	24.3	30.7	2.5	7.2	9.7	8.9	31.5	40.4
.....1962	11.9	25.3	37.2	2.3	7.1	9.4	14.2	32.4	46.6
Primary metals.....1961	32.9	93.6	126.5	19.1	135.0	154.1	52.0	228.6	280.6
.....1962	65.8	146.9	212.7	16.9	150.6	167.5	82.7	297.5	380.2
Metal fabricating.....1961	8.4	29.3	37.7	5.2	23.9	29.1	13.6	53.2	66.8
.....1962	11.2	34.6	45.8	5.5	26.6	32.1	16.7	61.2	77.9
Machinery.....1961	5.5	16.7	22.2	2.9	8.7	11.6	8.4	25.4	33.8
.....1962	4.4	14.2	18.6	2.6	9.1	11.7	7.0	23.3	30.3
Transportation equipment....1961	13.9	33.2	47.1	10.5	30.2	40.7	24.4	63.4	87.8
.....1962	11.0	34.2	45.2	9.9	33.4	43.3	20.9	67.6	88.5
Electrical products.....1961	7.8	22.4	30.2	3.2	16.3	19.5	11.0	38.7	49.7
.....1962	10.3	28.1	38.4	3.9	18.1	22.0	14.2	46.2	60.4
Non-metallic mineral products.....1961	11.9	32.8	44.7	4.2	42.0	46.2	16.1	74.8	90.9
.....1962	10.4	34.3	44.7	4.3	44.3	48.6	14.7	78.6	93.3
Petroleum and coal products...1961	27.9	4.0	31.9	26.1	4.4	30.5	54.0	8.4	62.4
.....1962	49.7	9.0	58.7	26.1	3.8	29.9	75.8	12.8	88.6
Chemical and chemical products.....1961	35.4	90.3	125.7	10.4	49.7	60.1	45.8	140.0	185.8
.....1962	45.6	53.5	99.1	9.1	49.1	58.2	54.7	102.6	157.3
Miscellaneous.....1961	5.6	14.2	19.8	2.1	6.3	8.4	7.7	20.5	28.2
.....1962	7.8	18.8	26.6	1.9	6.8	8.7	9.7	25.6	35.3
Capital items charged to operating expenses.....1961	—	124.0	124.0	—	—	—	—	124.0	124.0
.....1962	—	167.6	167.6	—	—	—	—	167.6	167.6
Totals, Manufacturing...1961	279.1	805.7	1,084.8	124.0	557.9	681.9	403.1	1,363.6	1,766.7
.....1962	345.9	885.5	1,231.4	122.1	587.8	709.9	468.0	1,473.3	1,941.3

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
UTILITIES									
Electric power.....1961	413.0	156.8	569.8	49.2	29.5	78.7	462.2	186.3	648.5
.....1962	464.8	115.8	580.6	51.3	31.3	82.6	516.1	147.1	663.2
Gas distribution.....1961	52.0	7.3	59.3	6.4	6.5	12.9	58.4	13.8	72.2
.....1962	56.1	11.4	67.5	6.0	1.7	7.7	62.1	13.1	75.2
Railway transport.....1961	161.5	37.2	198.7	142.1	171.9	314.0	303.6	209.1	512.7
.....1962	132.5	52.1	184.6	136.8	172.0	308.8	269.3	224.1	493.4
Urban transit systems.....1961	18.1	4.8	22.9	4.1	18.2	22.3	22.2	23.0	45.2
.....1962	20.7	9.9	30.6	3.7	18.7	22.4	24.4	28.6	53.0
Water transport and services.....1961	42.5	56.2	98.7	7.1	17.4	24.5	49.6	73.6	123.2
.....1962	24.0	53.1	77.1	6.6	17.1	23.7	30.6	70.2	100.8
Motor transport.....1961	6.6	41.0	47.6	1.6	54.8	56.4	8.2	95.8	104.0
.....1962	4.9	40.8	45.7	1.7	55.3	57.0	6.6	96.1	102.7
Grain elevators.....1961	17.3	2.4	19.7	5.6	2.2	7.8	22.9	4.6	27.5
.....1962	16.4	2.8	19.2	3.6	2.0	5.6	20.0	4.8	24.8
Telephones.....1961	122.7	198.4	321.1	35.3	97.5	132.8	158.0	295.9	453.9
.....1962	138.9	230.3	369.2	37.2	108.7	145.9	176.1	339.0	515.1
Broadcasting.....1961	4.8	15.1	19.9	0.7	3.1	3.8	5.5	18.2	23.7
.....1962	3.9	9.2	13.1	0.6	3.1	3.7	4.5	12.3	16.8
Water systems.....1961	71.2	3.2	74.4	19.1	1.4	20.5	90.3	4.6	94.9
.....1962	72.8	2.8	75.6	22.1	1.6	23.7	94.9	4.4	99.3
Other utilities.....1961	178.7	73.7	252.4	6.2	43.6	49.8	184.9	117.3	302.2
.....1962	77.7	38.5	116.2	6.3	46.2	52.5	84.0	84.7	168.7
Capital items charged to operating expenses.....1961	—	13.5	13.5	—	—	—	—	13.5	13.5
.....1962	—	53.3	53.3	—	—	—	—	53.3	53.3
Totals, Utilities.....1961	1,088.4	609.6	1,698.0	277.4	446.1	723.5	1,365.8	1,055.7	2,421.5
.....1962	1,012.7	620.0	1,632.7	275.9	457.7	733.6	1,288.6	1,077.7	2,366.3
TRADE									
Wholesale.....1961	27.7	29.8	57.5	5.2	8.3	13.5	32.9	38.1	71.0
.....1962	19.8	27.0	46.8	4.8	7.9	12.7	24.6	34.9	59.5
Chain stores.....1961	18.5	34.1	52.6	6.3	6.5	12.8	24.8	40.6	65.4
.....1962	18.1	35.5	53.6	4.8	5.8	10.6	22.9	41.3	64.2
Independent stores.....1961	29.6	56.3	85.9	12.9	11.9	24.8	42.5	68.2	110.7
.....1962	28.9	56.9	85.8	10.8	10.9	21.7	39.7	67.8	107.5
Department stores.....1961	16.4	14.9	31.3	4.6	2.4	7.0	21.0	17.3	38.3
.....1962	22.9	18.6	41.5	5.3	2.5	7.8	28.2	21.1	49.3
Automotive trade.....1961	35.0	28.5	63.5	9.8	11.1	20.9	44.8	39.6	84.4
.....1962	32.1	28.2	60.3	9.6	11.3	20.9	41.7	39.5	81.2
Capital items charged to operating expenses.....1961	—	16.3	16.3	—	—	—	—	16.3	16.3
.....1962	—	16.4	16.4	—	—	—	—	16.4	16.4
Totals, Trade.....1961	127.2	179.9	307.1	38.8	40.2	79.0	166.0	220.1	386.1
.....1962	121.8	182.6	304.4	35.3	38.4	73.7	157.1	221.0	378.1

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1961 and 1962—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
INSTITUTIONS									
Churches.....1961	58.6	3.5	62.1	8.8	0.6	9.4	67.4	4.1	71.5
.....1962	53.2	3.6	56.8	6.3	0.8	7.1	59.5	4.4	63.9
Universities.....1961	97.2	14.4	111.6	5.8	0.8	6.6	103.0	15.2	118.2
.....1962	110.3	20.6	130.9	7.1	1.2	8.3	117.4	21.8	139.2
Schools.....1961	223.1	29.9	253.0	30.4	6.7	37.1	253.5	36.6	290.1
.....1962	374.9	51.9	426.8	29.8	6.2	36.0	404.7	58.1	462.8
Hospitals.....1961	146.6	31.2	177.8	18.1	5.4	23.5	164.7	36.6	201.3
.....1962	152.2	28.6	180.8	18.1	5.9	24.0	170.3	34.5	204.8
Other institutional services...1961	10.3	1.6	11.9	1.1	0.1	1.2	11.4	1.7	13.1
.....1962	10.6	1.9	12.5	1.3	0.2	1.5	11.9	2.1	14.0
Totals, Institutions.....1961	535.8	80.6	616.4	64.2	13.6	77.8	609.0	94.2	694.2
.....1962	701.2	106.6	807.8	62.6	14.3	76.9	763.8	120.9	884.7

A summary of the capital expenditures in each province for the years 1961 and 1962 is given in Table 5. Such expenditures represent gross additions to the capital stocks of the province and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions. For example, the spending of millions of dollars on oil refineries and pipelines in Western Canada means activity in the steel industries of Ontario as well as construction activity in the western provinces.

5.—Capital and Repair Expenditures, by Province, 1961 and 1962

NOTE.—Actual expenditures 1961; preliminary actual 1962.

(Millions of dollars)

Province and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
Newfoundland.....1961	144	40	184	25	20	45	169	60	229
.....1962	185	88	273	27	20	47	212	108	320
Prince Edward Island.....1961	25	13	38	7	5	12	32	18	50
.....1962	29	14	43	7	5	12	36	19	55
Nova Scotia.....1961	151	73	224	54	38	92	205	111	316
.....1962	150	68	218	52	37	89	202	105	307
New Brunswick.....1961	115	56	171	41	36	77	156	92	248
.....1962	111	61	172	42	36	78	153	97	250
Quebec.....1961	1,386	622	2,008	347	389	736	1,733	1,011	2,744
.....1962	1,504	663	2,167	369	410	779	1,873	1,073	2,946
Ontario.....1961	1,794	1,000	2,794	501	594	1,095	2,295	1,594	3,889
.....1962	1,980	1,071	3,051	512	614	1,126	2,492	1,685	4,177

5.—Capital and Repair Expenditures, by Province, 1961 and 1962—concluded

Province and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
Manitoba.....1961	283	134	417	86	82	168	369	216	585
.....1962	289	153	442	82	89	171	371	242	613
Saskatchewan.....1961	302	152	454	81	86	167	383	238	621
.....1962	322	187	509	82	90	172	404	277	681
Alberta.....1961	722	259	981	155	134	289	877	393	1,270
.....1962	662	277	939	150	143	293	812	420	1,232
British Columbia.....1961	596	305	901	158	182	340	754	487	1,241
.....1962	610	314	924	161	187	348	771	501	1,272
Totals.....1961	5,518	2,654	8,172	1,455	1,566	3,021	6,973	4,220	11,193
.....1962	5,842	2,896	8,738	1,484	1,631	3,115	7,326	4,527	11,853

Section 2.—Construction Statistics

Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures which appear in Section 1.* The data represent the estimated total value of all new and repair construction performed by contractors; by labour forces of utility, manufacturing, mining and logging firms; and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

Canada's construction program for 1962 is estimated at \$7,329,000,000, an increase of 5.1 p.c. over 1961. Repair construction is estimated to be about \$32,000,000 higher than in 1961, and the value of new construction higher by about \$323,000,000.

6.—Value of New and Repair Construction Work Performed, 1953-62

NOTE.—Actual expenditures 1953-61; preliminary actual 1962.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	p.c.
1953.....	3,756	1,070	4,826	19.3
1954.....	3,737	1,105	4,842	19.5
1955.....	4,167	1,141	5,308	19.6
1956.....	5,272	1,182	6,454	21.1
1957.....	5,785	1,238	7,023	22.0
1958.....	5,831	1,261	7,092	21.6
1959.....	5,710	1,367	7,077	20.3
1960.....	5,454	1,432	6,886	19.0
1961.....	5,518	1,456	6,974	18.6
1962.....	5,841	1,488	7,329	18.1

Table 7, which compares contract construction with other construction, shows that contractors account for from 74 p.c. to 77 p.c. of the work performed each year.

* An explanation of sources and methods is given in DBS annual report *Construction in Canada* (Catalogue No. 64-201).

7.—Value of Construction Work Performed, by Contractors and Others, 1959-62

NOTE.—Actual expenditures 1959-61; preliminary actual 1962.

(Millions of dollars)

Item	1959	1960	1961	1962
Contract Construction	5,269	5,183	5,347	5,696
New.....	4,685	4,508	4,621	4,904
Repair.....	584	677	726	792
Other Construction¹	1,808	1,703	1,627	1,633
New.....	1,025	948	897	937
Repair.....	783	755	730	696
Totals, Construction	7,077	6,886	6,974	7,329
New.....	5,710	5,454	5,518	5,841
Repair.....	1,367	1,432	1,456	1,488

¹ Work done by the labour forces of utility, manufacturing, mining and logging firms and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

8.—Value and Percentage Distribution of Construction Work Performed, by Principal Type, 1959-62

NOTE.—Actual expenditures 1959-61; preliminary actual 1962.

(Millions of dollars)

Type of Construction	1959		1960		1961		1962	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Building Construction	4,240	59.9	4,051	58.8	4,143	59.4	4,525	61.7
Residential.....	2,183	30.9	1,913	27.8	1,951	28.0	2,100	28.7
Industrial.....	416	5.9	452	6.6	411	5.9	493	6.7
Commercial.....	759	10.7	738	10.7	755	10.8	733	10.0
Institutional.....	569	8.0	615	8.9	647	9.3	810	11.0
Other.....	313	4.4	333	4.8	379	5.4	389	5.3
Engineering Construction	2,837	40.1	2,835	41.2	2,831	40.6	2,804	38.3
Marine.....	134	1.9	119	1.7	121	1.7	91	1.3
Road, highway and aerodrome.....	791	11.1	830	12.1	750	10.8	793	10.8
Waterworks and sewage systems.....	226	3.2	233	3.4	223	3.2	231	3.2
Dams and irrigation.....	60	0.8	92	1.3	78	1.1	112	1.5
Electric power.....	395	5.6	349	5.1	411	5.9	455	6.2
Railway, telephone and telegraph.....	458	6.5	452	6.6	384	5.5	374	5.1
Gas and oil facilities.....	464	6.6	454	6.6	520	7.5	419	5.7
Other.....	309	4.4	306	4.4	344	4.9	329	4.5
Totals, All Construction	7,077	100.0	6,886	100.0	6,974	100.0	7,329	100.0

Table 9 gives estimates of total expenditures in Canada on each type of construction for which information is available.

9.—Value of Construction Work Performed, by Type of Structure, 1961 and 1962

NOTE.—Actual expenditures 1961; preliminary actual 1962.

Type of Structure	1961			1962		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Building Construction						
Residential	1,467,000	484,000	1,951,000	1,587,000	513,000	2,100,000
Industrial	294,303	116,565	410,868	370,282	122,394	492,676
Factories, plants, workshops, food canneries.....	227,534	91,360	318,894	278,644	93,795	372,439
Mine and mine mill buildings.....	50,331	7,245	57,576	72,314	10,438	82,752
Railway stations, offices, roadway buildings.....	11,236	11,668	22,904	11,241	11,598	22,839
Railway shops, engine houses, water and fuel stations.....	5,202	6,292	11,494	8,083	6,563	14,646
Commercial	637,305	117,354	754,659	623,701	109,599	733,300
Warehouses, storehouses, refrigerated storage, etc.....	52,924	12,317	65,241	47,570	11,982	59,552
Grain elevators.....	21,357	6,744	28,101	23,957	5,205	29,162
Hotels, clubs, restaurants, cafeterias, tourist cabins.....	33,876	12,692	46,568	32,554	9,569	42,123
Office buildings.....	311,504	40,373	351,877	284,865	41,364	326,229
Stores, retail and wholesale.....	136,237	28,520	164,757	149,970	25,811	175,781
Garages and service stations.....	34,877	9,192	44,069	31,994	8,850	40,844
Theatres, arenas, amusement and recreational buildings.....	44,824	6,592	51,416	51,836	5,836	57,672
Laundries and dry-cleaning establishments.....	1,706	924	2,630	955	982	1,937
Institutional	570,415	76,641	647,056	734,500	75,340	809,840
Schools and other educational buildings.....	322,239	38,729	360,968	486,285	39,183	525,468
Churches and other religious buildings.....	59,821	8,884	68,705	53,515	6,547	60,062
Hospitals, sanatoria, clinics, first-aid stations, etc.....	159,192	20,190	179,382	164,356	20,257	184,613
Other institutional buildings.....	29,163	8,838	38,001	30,344	9,353	39,697
Other Building	288,685	90,902	379,587	292,847	95,987	388,834
Farm buildings (excluding dwellings).....	152,951	58,788	211,739	165,828	63,424	229,252
Broadcasting, radio and television, relay and booster stations, telephone exchanges.....	65,848	3,616	69,464	59,966	3,491	63,457
Aeroplane hangars.....	5,153	3,480	8,633	3,984	3,417	7,401
Passenger terminals, bus, boat or air.....	22,406	423	22,829	20,563	1,591	22,154
Armouries, barracks, drill halls, etc.....	10,145	14,153	24,298	9,221	13,386	22,607
Bunkhouses, dormitories, camp cookeries, bush depots and camps.....	12,263	3,969	16,232	13,849	3,972	17,821
Miscellaneous.....	19,919	6,473	26,392	19,436	6,706	26,142
Totals, Building Construction ..	3,257,708	885,462	4,143,170	3,608,330	916,320	4,524,650
Engineering Construction						
Marine	104,347	16,496	120,843	74,908	15,870	90,778
Docks, wharves, piers, breakwaters.....	69,732	7,348	77,080	50,574	7,052	57,626
Retaining walls, embankments, riprapping.....	1,363	929	2,292	1,682	834	2,516
Canals and waterways.....	8,966	1,504	10,470	2,829	1,189	4,018
Dredging and pile driving.....	19,134	4,794	23,928	16,489	4,710	21,199
Dyke construction.....	914	167	1,081	759	158	917
Logging booms.....	337	628	965	306	537	843
Other.....	3,901	1,126	5,027	2,269	1,390	3,659
Road, Highway and Aerodrome ...	556,941	193,229	750,170	597,736	195,393	793,129
Hard surfaced or paved streets, highways, parking lots, etc.....	358,595	103,143	461,738	387,567	106,324	493,891
Gravel or stone streets, highways, roads, parking lots, etc.....	111,910	58,486	170,396	117,053	54,964	172,017

9.—Value of Construction Work Performed, by Type of Structure, 1961 and 1962—concluded

Type of Structure	1961			1962		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Engineering Construction —concluded						
Road, Highway and Aerodrome —concluded						
Dirt, clay or other streets, roads, parking lots, etc.....	29,444	9,783	39,227	32,295	9,614	41,909
Grading, scraping, oiling, filling...	14,520	13,015	27,535	19,695	15,799	35,494
Sidewalks, paths.....	15,844	6,431	22,275	16,728	6,362	23,090
Aerodromes, landing fields, run- ways, tarmac.....	26,628	2,371	28,999	24,398	2,330	26,728
Waterworks and Sewage Systems.	186,021	37,131	223,152	191,081	40,473	231,554
Tile drains, drainage ditches, storm sewers.....	4,095	2,987	7,082	4,717	3,411	8,128
Water mains, hydrants and serv- ices.....	59,388	17,648	77,034	57,329	17,492	74,821
Sewage systems and connections..	109,805	12,880	122,685	114,086	12,818	126,904
Pumping stations, water.....	10,728	3,388	14,116	13,703	3,132	16,835
Water storage tanks.....	2,007	228	2,235	1,246	3,620	4,866
Dams and Irrigation	71,379	6,972	78,351	104,256	7,387	111,643
Dams and reservoirs.....	57,055	2,963	60,018	87,826	3,183	91,009
Irrigation and land reclamation projects.....	14,324	4,009	18,333	16,430	4,204	20,634
Electric Power	354,087	57,294	411,381	396,642	58,697	455,339
Electric power generating plants, including water conveying and controlling structures.....	183,053	14,068	197,121	190,260	11,586	201,846
Electric transformer stations.....	26,345	6,892	33,237	34,523	7,169	41,692
Power transmission and distribu- tion lines, trolley wires.....	129,591	30,263	159,854	159,605	33,749	193,354
Street lighting.....	15,098	6,071	21,169	12,254	6,193	18,447
Railway, Telephone and Tele- graph	231,789	152,234	384,023	225,350	148,449	373,799
Railway tracks and roadbed.....	122,161	109,410	231,571	103,279	104,122	207,401
Signals and interlockers.....	8,703	7,401	16,104	6,240	7,503	13,743
Telegraph and telephone lines, underground and marine cables.	100,925	25,423	136,348	115,831	36,824	152,655
Gas and Oil Facilities	472,074	47,452	519,526	368,780	50,514	419,294
Gas mains and services.....	50,637	5,905	56,542	60,090	5,324	65,414
Pumping stations, oil.....	2,104	1,124	3,228	4,121	1,358	5,479
Pumping stations, gas.....	13,655	118	13,773	22,990	414	23,404
Oil storage tanks.....	17,991	2,783	20,774	15,987	2,978	18,965
Gas storage tanks.....	894	15	909	431	28	459
Oil pipelines.....	41,121	1,836	42,957	14,282	2,469	16,751
Gas pipelines.....	94,210	1,050	95,260	22,805	1,112	23,917
Oil wells.....	115,294	5,853	121,147	119,654	7,976	127,630
Gas wells.....	44,868	1,654	46,422	37,938	1,341	39,279
Oil refinery—processing units.....	24,260	22,969	48,229	42,927	25,072	67,999
Natural gas cleaning plants.....	67,040	3,245	70,285	27,555	2,442	29,997
Other Engineering	283,944	59,819	343,763	274,380	54,679	328,959
Bridges, trestles, culverts, over- passes, viaducts.....	181,412	26,154	207,566	172,821	24,804	197,625
Tunnels and subways.....	18,941	320	19,261	21,019	308	21,327
Incinerators.....	352	51	403	301	49	350
Park systems, landscaping, sod- ding, etc.....	5,916	4,461	10,377	6,227	5,166	11,393
Swimming pools, tennis courts, outdoor recreation facilities.....	4,684	1,578	6,262	4,400	1,540	5,940
Mine shafts and other below surface workings.....	28,476	3,345	31,821	22,956	1,918	24,874
Fences, snowsheds, signs, guard- rails.....	14,468	10,279	24,747	14,132	10,563	24,695
Miscellaneous.....	29,695	13,631	43,326	32,524	10,231	42,755
Totals, Engineering Construc- tion	2,260,582	570,627	2,831,209	2,233,133	571,362	2,804,495
Totals, All Construction	5,518,290	1,456,089	6,974,379	5,841,463	1,487,682	7,329,145

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 10. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

10.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1961 and 1962 with Totals for 1958-62

NOTE.—Actual expenditures 1958-61; preliminary actual 1962. Comparable figures from 1953 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province or Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
Province		\$'000	\$'000	\$'000
Newfoundland.....1961	13,462	55,022	77,575	169,491
.....1962	16,275	68,357	96,299	211,812
Prince Edward Island.....1961	3,160	9,844	15,649	32,254
.....1962	3,389	10,842	17,620	36,050
Nova Scotia.....1961	20,841	73,537	94,800	204,845
.....1962	20,270	72,757	93,313	202,772
New Brunswick.....1961	15,003	51,688	80,039	157,243
.....1962	14,475	50,830	79,360	153,683
Quebec.....1961	135,116	566,190	860,458	1,732,739
.....1962	142,211	608,800	929,383	1,873,504
Ontario.....1961	172,666	801,021	1,077,333	2,294,781
.....1962	183,078	869,325	1,172,318	2,492,614
Manitoba.....1961	29,020	128,903	177,085	369,662
.....1962	28,400	128,971	174,717	370,658
Saskatchewan.....1961	28,528	127,292	175,534	383,021
.....1962	29,576	134,720	187,446	404,181
Alberta.....1961	60,453	270,128	386,068	876,719
.....1962	56,519	251,783	375,187	813,207
British Columbia.....1961	52,605	265,604	328,972	753,624
.....1962	53,056	270,520	338,444	770,664
Totals.....1958	581,992	2,315,435	3,372,827	7,092,481
.....1959	571,912	2,378,214	3,367,254	7,077,383
.....1960	541,191	2,336,891	3,251,622	6,886,255
.....1961	530,854	2,349,229	3,273,513	6,974,379
.....1962	547,249	2,466,905	3,464,087	7,329,145
Employer				
Contractors.....1961	358,112	1,655,512	2,552,390	5,347,557
.....1962	376,840	1,769,598	2,741,361	5,696,455
Utilities.....1961	65,149	319,510	365,810	748,290
.....1962	65,812	328,541	372,604	765,415
Governments.....1961	71,833	220,089	173,029	497,272
.....1962	70,460	219,945	171,832	495,196
Others.....1961	35,760	154,118	182,284	381,260
.....1962	34,137	148,821	178,290	372,079

Subsection 2.—Contracts Awarded and Building Permits Issued

In this Subsection, statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only so far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

11.—Value of Construction Contracts Awarded, 1939-62(Source: *MacLean Building Guide*)

NOTE.—Figures for the years 1926-38 are given in the corresponding table of the 1962 Year Book, p. 682.

Year	Value of Construction Contracts	Year	Value of Construction Contracts	Year	Value of Construction Contracts
	\$		\$		\$
1939.....	187,178,500	1947.....	718,137,100	1955.....	3,183,592,000
1940.....	346,009,800	1948.....	954,082,400	1956.....	3,426,905,500
1941.....	393,991,300	1949 ¹	1,143,547,300	1957.....	2,894,168,100
1942.....	281,594,100	1950.....	1,525,764,700	1958.....	3,593,709,200
1943.....	206,103,900	1951.....	2,295,499,200	1959.....	3,219,073,300
1944.....	291,961,800	1952.....	1,812,177,600	1960.....	3,053,749,500
1945.....	409,032,700	1953.....	2,017,060,700	1961.....	3,220,937,300
1946.....	663,355,100	1954.....	2,154,959,200	1962.....	3,351,717,500

¹ Newfoundland included from Apr. 1, 1949.**12.—Value of Construction Contracts Awarded, by Province and Type of Construction, 1961 and 1962**(Source: *MacLean Building Guide*)

Province and Type of Construction	1961	1962	Type of Construction	1961	1962
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	147,688	43,823	Business.....	1,090,518	1,285,934
Prince Edward Island.....	12,480	10,457	Churches.....	46,587	49,257
Nova Scotia.....	83,012	75,009	Public garages.....	12,366	12,088
New Brunswick.....	63,140	80,880	Hospitals.....	93,727	94,030
Quebec.....	888,673	914,962	Hotels and clubs.....	116,938	109,107
Ontario.....	1,229,003	1,430,363	Office buildings.....	127,336	118,064
Manitoba.....	164,340	143,845	Public buildings.....	143,048	110,672
Saskatchewan.....	134,809	113,154	Schools.....	336,136	500,512
Alberta.....	287,019	310,864	Stores.....	118,751	199,380
British Columbia.....	210,774	228,359	Theatres.....	13,740	1,459
			Warehouses.....	81,891	94,365
Totals.....	3,220,937	3,351,718	Industrial.....	361,239	277,559
			Engineering.....	765,222	626,851
Residential.....	1,003,959	1,161,374	Bridges.....	84,205	92,169
Apartments.....	269,610	349,949	Marine.....	65,465	41,391
Residences.....	734,349	811,425	Sewerage and waterworks.....	127,444	132,785
			Roads and streets.....	193,679	219,799
			Power and communications.....	205,582	91,719
			Miscellaneous.....	88,847	48,988

Building Permits.—The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits issued are collected for more than 1,000 municipalities across the country and are available for the individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

During 1962, building permits issued in Canada for construction work exceeded \$2,500,000,000 in value. This was the highest figure on record and represented an increase of 12.1 p.c. over 1961. New residential construction increased 3.3 p.c., industrial construction 10.1 p.c., commercial construction 7.2 p.c. and institutional and government construction 43.8 p.c. On a regional basis, increases in the total value of building permits were recorded in all the western provinces except Manitoba and in the central provinces of Ontario and Quebec. On the other hand, declines were experienced in all the Atlantic Provinces except Nova Scotia.

Table 13 shows the value of building permits issued in each of 50 municipalities for the years 1961 and 1962.

13.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1961 and 1962

NOTE.—Comparable figures for 1956-60 are given in the 1962 Year Book, p. 684.

Province and Municipality	1961	1962	Province and Municipality	1961	1962
	\$'000	\$'000		\$'000	\$'000
Newfoundland—			Ontario—concluded		
St. John's.....	15,732	12,521	Port Arthur.....	13,905	11,178
Prince Edward Island—			Scarborough Township.....	58,687	53,189
Charlottetown.....	5,083	2,724	Toronto.....	108,062	107,346
Nova Scotia—			Toronto Township.....	25,957	26,096
Halifax.....	20,710	15,835	Windsor.....	10,959	9,844
New Brunswick—			York North Township.....	100,826	124,050
Fredericton.....	5,277	5,386	York Township.....	9,226	9,006
Moncton.....	14,002	7,644	Manitoba—		
Saint John.....	4,733	4,474	Fort Garry.....	83,543 ¹	82,847 ¹
Quebec—			St. Boniface.....		
LaSalle.....	10,948	7,976	St. James.....		
Montreal.....	117,770	170,715	Winnipeg.....		
Quebec.....	16,173	34,557	Saskatchewan—		
St. Laurent.....	9,111	10,811	Moose Jaw.....	2,185	4,129
Ste. Foy.....	16,613	18,007	Prince Albert.....	5,579	5,573
Sept Îles.....	9,261	5,802	Regina.....	32,582	29,902
Sherbrooke.....	8,210	13,337	Saskatoon.....	26,624	24,093
Trois Rivières.....	6,340	9,424	Alberta—		
Ontario—			Calgary.....	70,376	87,918
Brampton.....	12,196	13,483	Edmonton.....	68,589	90,250
Burlington.....	10,821	12,602	Jasper Place.....	8,863	11,327
Etobicoke Township.....	64,838	67,050	Lethbridge.....	6,634	9,243
Hamilton.....	34,500	42,781	Medicine Hat.....	6,739	5,607
Kitchener.....	15,558	16,262	Red Deer.....	6,920	10,326
London.....	34,813	47,976	British Columbia—		
London Township.....	532	448	Burnaby District.....	13,080	20,840
Nepean Township.....	18,563	20,293	Richmond District.....	11,785	5,416
Oshawa.....	10,973	9,660	Surrey District.....	9,082	8,162
Ottawa.....	78,524	66,163	Vancouver.....	38,699	44,397
			Victoria.....	9,129	12,608

¹ Metropolitan Corporation of Greater Winnipeg.

Table 14 shows the value of building permits issued in 17 metropolitan areas across Canada. In 1962 the permits issued in these areas made up 68 p.c. of the total for Canada.

14.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1961 and 1962

Metropolitan Area	1961	1962	Metropolitan Area	1961	1962
	\$'000	\$'000		\$'000	\$'000
St. John's ¹	15,732	12,521	Sudbury.....	15,082	21,695
Halifax.....	31,748	30,523	London.....	38,200	51,578
Saint John.....	4,881	4,936	Windsor.....	21,825	21,811
Quebec.....	59,006	76,926	Winnipeg.....	83,543	82,847
Montreal.....	318,917	404,777	Calgary.....	74,947	89,579
Ottawa-Hull.....	128,012	109,746	Edmonton.....	90,220	113,073
Toronto.....	358,151	441,739	Vancouver.....	108,482	119,174
Hamilton.....	53,685	63,234	Victoria.....	23,726	30,924
Kitchener.....	36,562	36,059			

¹ Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

Table 15 shows the value of building permits, by province, for the years 1961 and 1962 and Table 16 the number of dwelling units covered by building permits in each province for the same years. The relative material was compiled from municipal figures and therefore varies with the terms of individual by-laws, with the methods of estimating the value of local construction and with other factors that may differ from area to area. Information is not available on the permits allowed to lapse without the relative construction being undertaken.

15.—Value of Building Permits Issued, by Province, 1961 and 1962 with Totals for 1958-62

NOTE.—Comparable figures from 1952 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province and Year	Residential Construction			Non-residential Construction				Total
	New	Repair	Total	Industrial	Commercial	Institutional and Government	Other	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1961	5,129	539	5,668	978	2,866	10,269	9	19,790
.....1962	6,843	693	7,536	782	3,771	6,551	—	18,640
Prince Edward Island 1961	3,915	128	4,043	1,580	539	1,541	—	7,703
.....1962	820	120	940	336	827	1,224	—	3,827
Nova Scotia.....1961	14,955	1,828	16,783	2,704	14,834	10,233	20	44,574
.....1962	17,533	1,763	19,296	5,502	8,805	11,097	—	44,700
New Brunswick.....1961	9,202	1,602	10,804	1,325	9,003	9,085	6	30,223
.....1962	9,310	1,435	10,745	1,878	6,232	7,908	—	26,763
Quebec.....1961	276,093	16,928	293,021	34,314	104,011	89,163	220	520,729
.....1962	315,522	15,056	330,578	61,520	136,764	118,083	—	646,945
Ontario.....1961	469,449	25,464	494,913	95,559	196,891	200,356	481	988,200
.....1962	450,284	25,022	475,306	108,872	177,245	303,557	—	1,064,980
Manitoba.....1961	47,685	3,163	50,848	16,940	17,561	19,885	25	105,259
.....1962	39,782	3,100	42,882	7,776	24,683	24,044	—	99,385
Saskatchewan.....1961	43,306	2,927	46,233	3,520	18,304	20,210	132	88,399
.....1962	38,835	2,315	41,150	2,923	15,725	31,119	—	90,917
Alberta.....1961	133,212	5,248	138,460	21,697	35,778	36,231	212	232,378
.....1962	139,083	4,714	143,797	14,179	50,325	75,868	—	284,169
British Columbia.....1961	104,572	10,645	115,217	19,493	38,065	34,021	202	206,998
.....1962	126,352	10,600	136,952	14,370	44,979	40,451	—	236,752
Totals.....1958	1,323,792	57,078	1,380,870	180,090	366,741	425,626	3,432	2,356,759
.....1959	1,190,580	64,681	1,255,261	192,713	508,845	418,958	3,299	2,379,076
.....1960	883,823	60,676	944,499	184,221	432,749	459,836	3,522	2,024,827
.....1961	1,107,518	68,472	1,175,990	198,110	437,852	430,994	1,307	2,244,253
.....1962	1,144,364	64,818	1,209,182	218,138	469,356	619,902	—	2,516,678

16.—Number of Dwelling Units Covered by Building Permits, by Province, 1961 and 1962 with Totals for 1958-62

Province and Year	Apart- ments	Other	Total	Province and Year	Apart- ments	Other	Total
	No.	No.	No.		No.	No.	No.
Newfoundland.....1961	32	441	473	Manitoba.....1961	1,368	3,440	4,808
1962	6	677	683	1962	1,278	2,780	4,058
Prince Edward Island...1961	37	359	396	Saskatchewan.....1961	499	3,597	4,096
1962	8	56	64	1962	919	2,935	3,854
Nova Scotia.....1961	439	1,013	1,452	Alberta.....1961	2,921	9,809	12,730
1962	910	904	1,814	1962	4,111	9,603	13,714
New Brunswick.....1961	208	700	908	British Columbia.....1961	2,865	7,424	10,289
1962	330	726	1,056	1962	5,095	7,827	12,922
Quebec.....1961	10,507	21,966	32,473	Totals.....1958	46,847	102,297	149,144
1962	15,489	22,658	38,147	1959	41,745	87,000	128,745
Ontario.....1961	17,836	23,145	45,981	1960	33,711	60,299	94,010
1962	19,965	25,136	45,101	1961	36,712	76,894	113,606
				1962	45,111	73,302	121,413

The indexes given in Table 17 show as far as possible the fluctuations in building costs and their effect upon construction work and employment. The relative proportions of material and wage costs in general building are difficult to determine since such proportions vary with the type of building and the centres studied.

17.—Index Numbers of Prices of Building Materials, and Wage Rates and Employment in Construction Industries, 1953-62

(Av. 1949=100)

Year	Prices of Building Materials		Wage Rates in Construction Industries ¹	Employment in Building Construction ²
	Residential	Non- residential		
1953.....	123.9	124.4	137.2	127.8
1954.....	121.7	121.8	141.1	111.1
1955.....	124.3	123.4	146.6	120.2
1956.....	128.5	128.0	152.4	145.5
1957.....	128.4	130.0	162.9	147.7
1958.....	127.3	129.8	173.6	130.1
1959.....	130.0	131.7	183.4	136.5
1960.....	129.2	132.3	195.5	138.6
1961.....	128.4	131.1	199.7	122.5
1962.....	129.6	131.9	209.7	127.9

¹ Compiled by the Department of Labour.

² As reported by employers with 15 or more employees.

Section 3.—Housing*

Subsection 1.—Government Aid to House-Building

Federal Assistance.—The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1918, when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This

* Subsections 1 and 2 were prepared in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as "an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions". Central Mortgage and Housing Corporation, a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation has the authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It also acts as a research agency in fields associated with housing and enters into partnership with both provincial and municipal governments to assist in housing. (See also p. 119.)

In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that rightfully belong to other levels of government or that could be borne more effectively by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of more than 4,851,000 houses have been built since the first covering legislation was enacted; about one third of these were financed in one way or another under the Housing Acts.

The terms of the National Housing Act, 1954 and its subsequent amendments, with the exception of that passed late in 1962, are described in some detail at pp. 688-691 of the 1962 Year Book. The 1962 amendment (SC 1962-63, c. 17) extends the deadline for partial forgiveness of municipal indebtedness in connection with sewage treatment project loans to Mar. 31, 1965. A consolidation of the Act and its amendments to 1960-61 is available from the Queen's Printer (Catalogue No. YX79-221/23, 35 cents).

Subsection 2.—Housing Activities in 1962

There was a levelling off in the amount of new residential construction undertaken in 1962. The total of 130,095 starts of all types of housing was only slightly above the 1961 total of 125,577, although it represented a substantial gain over the 108,858 reported in 1960. Construction was maintained at a comparatively high level throughout the year, partly because of a large carryover of houses started but not completed in 1961. The value of residential construction work put in place was \$1,587,000,000 compared with \$1,467,000,000 in the previous year.

A shift in the composition of housing starts marked one of the more significant variations in the 1962 housing pattern. There was a considerable gain in rental dwelling starts, rental housing accounting for 41 p.c. of all starts during the year. This trend was not restricted to any one sector. Nearly all metropolitan centres experienced a strong revival in apartment construction. On the other hand, home-owner dwelling starts declined to 77,236 units from 79,477 in 1961.

During 1962, 48,151 units were built with National Housing Act financing, a reduction from the 1961 total of 59,870, and units financed by funds other than NHA numbered 81,938, a considerable increase over the 65,707 units so financed in the previous year. Mortgage money from NHA approved lenders was easily accessible during the first six months of 1962 but during the second half the flow from this source was considerably curtailed. The 32,437 units financed by approved lenders in 1962 represented a 12-p.c. drop from 1961. Meanwhile, conventional mortgage loans were in good supply, increasing from 41,465 in 1961 to 56,365 in 1962.

Demand for new housing in 1962 prevented any large-scale vacancy rate from developing and most of the completed dwellings were absorbed.

18.—Dwelling Units Started and Completed, by Type of Financing, 1953-62 and by Region, 1961 and 1962

Year and Region	Dwelling Units Started					Dwelling Units Completed
	National Housing Act		Conventional Institutional Loans	All Other Financing	Total	
	CMHC Loans	Approved Lenders Loans				
	No.	No.	No.	No.	No.	No.
1953.....	4,907	33,998	21,091	42,413	102,409	96,839
1954.....	1,215	48,819	32,891	30,602	113,527	101,965
1955.....	2,120	63,073	35,999	37,084	138,276	127,929
1956.....	2,712	40,149	35,687	48,763	127,311	135,700
1957.....	22,333	23,971	32,866	43,170	122,340	117,283
1958.....	35,795	44,533	42,929	41,375	164,632	146,686
1959.....	35,229	26,596	45,198	34,322	141,345	145,671
1960.....	13,788	18,923	40,116	36,031	108,858	123,757
1961.....	23,852	35,334	38,316	28,075	125,577	115,608
1962.....	15,633	31,790	54,214	28,458	130,095	126,682
1961						
Atlantic Provinces.....	1,124	1,018	1,813	4,568	8,523	7,969
Quebec.....	5,982	6,765	14,400	7,068	34,215	31,756
Ontario.....	7,973	19,834	13,044	7,293	48,144	43,754
Prairie Provinces.....	7,094	6,287	5,318	4,826	23,525	20,962
British Columbia.....	1,679	1,430	3,741	4,320	11,170	11,167
1962						
Atlantic Provinces.....	668	1,031	2,668	3,076	7,443	7,650
Quebec.....	4,760	6,844	18,590	9,958	40,152	35,782
Ontario.....	3,886	15,974	20,876	3,570	44,306	47,287
Prairie Provinces.....	5,167	6,315	5,869	6,951	24,302	24,043
British Columbia.....	1,152	1,626	6,211	4,903	13,892	11,920

19.—Dwelling Units Started in Metropolitan and Major Urban Areas, 1961 and 1962

Area	Population 1961	Dwelling Units Started				
		1961 ¹	1962 ¹	1962 ²		
				Total	Single and Two-Family	Row and Apartments
	'000	No.	No.	No.	No.	No.
Metropolitan Areas—						
Calgary.....	279	4,414	5,136	5,136	3,120	2,016
Edmonton.....	337	4,562	4,823	5,255	3,502	1,753
Halifax.....	184	1,365	1,590	1,590	820	770
Hamilton.....	395	2,267	2,812	2,921	1,636	1,285
Kitchener.....	155	s	s	1,381	953	428
London.....	181	1,799	2,251	2,251	1,088	1,163
Montreal.....	2,110	17,204	21,594	25,610	13,586	12,024
Ottawa-Hull.....	430	6,300	6,346	6,346	3,043	3,303
Quebec.....	358	3,247	3,943	3,946	2,281	1,665
Saint John.....	96	561	541	541	430	111
St. John's.....	91	252	373	373	373	—
Sudbury.....	111	s	s	1,232	592	640
Toronto.....	1,824	17,518	14,267	16,546	7,679	8,867
Vancouver.....	790	5,588	7,387	7,387	3,607	3,780
Victoria.....	154	1,279	1,341	1,601	846	755
Windsor.....	193	526	495	495	347	148
Winnipeg.....	476	4,187	2,817	2,857	1,937	920
Totals, Metropolitan Areas....	8,164	71,069	75,716	85,468	45,840	39,623

For footnotes, see end of table.

19.—Dwelling Units Started in Metropolitan and Major Urban Areas, 1961 and 1962
—concluded

Area	Population 1961	Dwelling Units Started				
		1961 ¹	1962 ¹	1962 ²		
				Total	Single and Two- Family	Row and Apart- ments
	'000	No.	No.	No.	No.	No.
Major Urban Areas—						
Brantford.....	57	216	326	326	242	84
Chicoutimi-Jonquière.....	105	604	381	373	348	25
Drummondville.....	39	4	4	161	150	11
Fort William-Port Arthur.....	93	584	570	570	437	133
Guelph.....	42	474	311	311	173	138
Kingston.....	63	462	445	445	249	196
Kitchener.....	5	1,227	1,081	3	3	3
Moncton.....	56	483	480	480	342	138
Niagara Falls.....	55	179	197	197	197	—
Oshawa.....	81	657	680	680	527	153
Peterborough.....	50	289	192	157	156	1
Regina.....	112	1,334	1,208	1,208	888	320
St. Catharines.....	95	417	420	437	342	95
St. Jean.....	35	4	4	118	110	8
Sarnia.....	61	541	210	214	206	8
Saskatoon.....	96	1,229	1,009	1,009	836	173
Sault Ste. Marie.....	58	730	556	556	441	115
Shawinigan.....	64	241	229	222	203	19
Sherbrooke.....	70	555	748	691	394	297
Sudbury.....	3	838	1,232	3	3	3
Sydney-Glace Bay.....	106	164	110	110	89	21
Timmins.....	40	133	77	77	77	—
Trois Rivières.....	84	699	552	544	489	55
Valleyfield.....	30	4	4	167	141	26
Totals, Major Urban Areas...	1,492	12,056	11,014	9,053	7,037	2,016
All Other.....	8,545	42,452	43,365	35,574	32,541	3,033
Canada³.....	18,201	125,577	130,095	130,095	85,418	44,677

¹ Data on 1956 Census Area definitions.² Data on 1961 Census Area definitions.³ Reclassified

from Major Urban Area to Metropolitan Area in 1961 Census.

⁴ Classified as Major Urban Area in 1961 Census.⁵ Excludes Yukon and Northwest Territories.

Operations under the National Housing Act.—In 1962, 47,689 dwelling units were financed under the Act compared with 61,353 in 1961. Of these, 47,142 were built with mortgage loans (32,437 by approved lenders and 14,705 by the Corporation) and federal-provincial partnership arrangements accounted for 547. The approved lenders provided NHA mortgage financing in an amount of \$383,900,000 while the Central Mortgage and Housing Corporation provided \$163,300,000 from public funds.

The volume of insured mortgage lending by the life insurance and trust and loan companies was 12 p.c. lower than in 1961. Loans by all approved lenders financed 32,437 units compared with 36,810 in 1961. Although the life insurance companies were the main source of NHA mortgage funds and financed 18,582 dwellings, the trust companies were responsible for 11,956 units. Loan companies made loans for 1,895 units.

The decline in NHA lending during 1962 took place largely in insured rental loans; approved lenders made loans for 7,824 units of rental accommodation compared with 10,612 in 1961. More than 75 p.c. of the dwellings financed by approved lenders in 1962 were for owner occupancy—21,324 to be built by merchant builders for sale to owners and 3,289 by owner-applicants who made their own construction arrangements. Comparable figures for 1961 were 22,704 units and 3,494 units, respectively.

Although policy governing lending by the Corporation was virtually unchanged from 1961, the number and value of loans approved declined appreciably during 1962. During

the year, the Corporation made mortgage loans for 14,705 units—13,223 to be occupied by home owners and 1,482 in limited-dividend projects. In 1961, the Corporation made loans for 20,298 dwellings for owner-occupancy and 3,326 for rental in limited-dividend projects.

During 1962, Corporation loans were available to eligible owner-applicants in any part of Canada, and to merchant builders provided the houses to be financed had been pre-sold to qualified purchasers. In both instances, applicants were required to submit written evidence that they had been unable to obtain loans from an approved lender. To assist in financing the construction of display houses, the Corporation was authorized in November to make to each qualifying builder two loans without the pre-sale requirement and loans for the construction of 794 such prototypes were approved. The Government also directed the Corporation near the year-end to make direct loans for privately sponsored rental housing projects, particularly in smaller communities where loans cannot be obtained from approved lenders.

20.—Mortgage Loans Approved by Lending Institutions, by Type of Property and of Loan, 1953-62

Year	New Housing		Existing Houses	Other Property	Total
	NHA Loans	Conventional Loans	Conventional Loans	Conventional Loans	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1953.....	256	119	117	89	581
1954.....	464	180	145	115	904
1955.....	639	235	183	138	1,195
1956.....	425	255	177	141	998
1957.....	278	239	150	104	771
1958.....	519	291	208	174	1,192
1959.....	308	343	216	216	1,083
1960.....	242	307	221	263	1,033
1961.....	453	333	300	298	1,384
1962.....	412	450	358	311	1,531

Loans to Limited-Dividend Housing Companies.—Developments approved in 1962 provided 342 units for lower-income families in projects sponsored by entrepreneurs and 1,140 units for elderly persons, all by non-profit organizations or municipalities. The number of dwellings financed at 1,482 was substantially below the 3,326 reported for 1961, the decrease reflecting lack of interest in the limited-dividend field by companies sponsored by entrepreneurs, whose projects are subject to more restrictive terms. Loans to limited-dividend companies may be made for the purchase and conversion of existing buildings into low-rental developments. The first loan of this kind was made in 1962—to Metropolitan Toronto Housing Company Limited in an amount of \$847,170 for the purchase of an apartment house and its conversion into 151 low-rental units for elderly persons.

Borrower and House Characteristics.—The average size of families borrowing under NHA continued to rise in 1962, following the trend of the 1950's. The proportion of families with three or more children represented 29.6 p.c. of NHA borrowers compared with 29.0 p.c. in 1961 and 12.5 p.c. in 1950. Almost half of the borrowers were in the 29-34-year age group, the average age of borrower being 34.5 years. Nearly 75 p.c. of NHA borrowers in 1962 were buying a home for the first time.

The average income of NHA home-owner borrowers was \$6,015, compared with \$5,810 in 1961; 27.5 p.c. had an income of \$5,000 or less. The average down-payment was \$2,421 on a house costing \$14,815. Borrowers paid out, on the average, 21.4 p.c. of their income in monthly payments on mortgage principal, interest and property taxes combined.

The size of the average house increased to 1,189 sq. feet from 1,154 sq. feet in 1961; smaller houses—of less than 1,000 sq. feet—decreased from 12.6 p.c. of the total to 10.8 p.c.

There were more homes with four or more bedrooms. Bungalows represented almost 75 p.c. of all single-detached dwellings financed under NHA in 1962, split-level houses for 20 p.c. and two-storey houses for about 5 p.c.

Home Improvement Loans.—There was a moderate drop in the volume of NHA guaranteed bank loans for home improvements. The banks approved 23,895 such loans in an amount of \$38,000,000, compared with 28,097 loans for a value of \$42,600,000 in 1961. At the year-end, the banks reported \$69,900,000 outstanding on such loans compared with \$65,900,000 at the end of the previous year. The Home Improvement Loan Insurance Fund, comprised of fees received from borrowers, stood at \$2,500,000 compared with \$2,200,000 a year previously.

Loans for University Housing Projects.—In 1962, NHA loans for a total amount of \$21,200,000 were made to 19 universities and colleges for the construction of resident housing accommodation for more than 4,400 students. These loans were provincially distributed as follows:—

Province	Loans	Amount	Students to be Accommodated
	No.	\$'000	No.
Newfoundland.....	—	—	—
Prince Edward Island.....	—	—	—
Nova Scotia.....	2	1,097	241
New Brunswick.....	—	—	—
Quebec.....	6	4,321	957
Ontario.....	5	3,953	804
Manitoba.....	3	4,161	744
Saskatchewan.....	1	2,357	349
Alberta.....	1	4,976	1,218
British Columbia.....	1	371	53

The average loan per student was \$4,864. Thirteen other universities or colleges submitted preliminary applications for loans which, if approved, would result in loans of \$10,100,000 to provide dormitories for an additional 2,400 students. The total amount of loans that can be advanced by the Corporation for university housing is set by statute at \$100,000,000. From the enactment of the legislation in December 1960 to December 1962, 41 loans totalling \$41,500,000 were approved for residences to accommodate some 8,700 students.

Loans for Municipal Sewage Treatment Projects.—During 1962, 223 NHA loans amounting to \$15,000,000 were made to assist municipalities in financing sewage treatment projects, provincially distributed as follows:—

Province	Loans	Amount	Province	Loans	Amount
	No.	\$'000		No.	\$'000
Newfoundland.....	3	894	Ontario.....	86	35,231
Prince Edward Island...	2	35	Manitoba.....	14	640
Nova Scotia.....	2	1,127	Saskatchewan.....	52	1,049
New Brunswick.....	5	133	Alberta.....	21	563
Quebec.....	18	3,628	British Columbia.....	20	1,759

A further 220 preliminary applications or inquiries were received. From enactment of the legislation for these loans in December 1960 to December 1962, 367 loans with an aggregate value of \$85,000,000 were approved for 297 municipalities. Although close to one half of all the municipalities receiving such aid had a population of fewer than 1,000 persons, the over-all population of communities receiving assistance exceeded 6,000,000. Loans were made in each of the ten provinces, with Ontario, Saskatchewan and British Columbia the most active. Many villages and small towns receiving federal assistance for sewerage works are installing complete systems for the first time, in contrast with the larger municipalities where such loans are used to improve or extend existing facilities. Thus, the per capita loan is usually higher in the smaller community.

The Act initially provided that one quarter of the loan and interest thereon be forgiven for work put in place on or before Mar. 31, 1963; late in 1962, Parliament approved an extension of two years to Mar. 31, 1965.

Mortgage Marketing.—The Corporation continued its efforts to encourage development of a market for National Housing Act insured mortgages. Three offerings were made during the year to members of the Investment Dealers' Association of Canada, NHA approved lenders and their NHA approved correspondents. The total amount offered to investors was \$83,500,000, but sales were limited to \$60,000,000, the excess providing prospective investors with more opportunities for selection. Since June 1961, approximately \$85,000,000 of the Corporation's mortgage portfolio has been sold. Of this amount, sales of \$17,000,000 were effected in 1962. On Dec. 6, 1962, the Corporation was authorized to make short-term lending facilities available to NHA approved lenders as an added stimulus to the development of an active mortgage market in Canada.

Urban Redevelopment.—The redevelopment of blighted areas in Canadian cities was again substantially assisted by federal contributions in 1962. An estimated \$2,600,000 was approved to help the City of Montreal acquire and clear 17.6 acres of a 27-acre redevelopment area in the east end of the city. Some 72 acres of waterfront in Hamilton have been marked for clearance and redevelopment as a public park and recreational area with a \$600,000 federal contribution. Two separate projects were under way in Halifax—one a 17-acre site to be put to commercial, residential and light industrial use and the other a long-term redevelopment program designed to revitalize an older part of the city. Saint John invited proposals for the private development of industrial, commercial and high-density residential land on 12 acres of the 57-acre slum clearance project undertaken prior to 1962. A federal-provincial housing project has also been approved for the cleared area.

Federal-Provincial Projects.—During 1962, the Government approved rental housing projects under federal-provincial arrangements in Saint John, Montreal, Galt, Winnipeg, Saskatoon and Weyburn and to the extension of an Ottawa project. These will provide a total of 517 dwellings for rent to tenants of low income. Requests for projects were received from the County of Halifax, Moncton and North Battleford and investigation of proposed projects was under way in 38 municipalities in Ontario. Since 1950 when the first project was approved until the end of 1962, 11,167 dwelling units in 93 projects were approved. Of these, 9,035 units were finished and turned over to local housing authorities for administration.

During 1962, approval was given to service 1,469 lots in four land assembly projects. Preliminary investigations for such projects were under way in three Ontario municipalities and an additional 569 lots were offered for sale. The total number of lots serviced and sold under federal-provincial arrangements up to the end of 1962 was 9,503.

Housing Research and Community Planning.—Under the NHA, the Corporation is responsible for investigating housing conditions and for distributing information leading to the improvement of housing and community planning. The Corporation also assists other organizations engaged in housing and community planning studies. During 1962, approximately \$1,000,000 was expended for this purpose, both on its own account and through arrangements with outside agencies.

Federal grants were made to the Ontario Research Foundation, the National House Builders' Association, the Community Planning Association, the Ontario Association of Housing Authorities, the Royal Architectural Institute of Canada and the Province of Ontario, as well as to the Canadian Council on Urban and Regional Research. Educational grants were also made to students in architecture and community planning, including 15 fellowships of \$1,500 each to students attending planning courses at Canadian universities, and five bursaries of \$1,200 each to university students attending graduate courses in the fields of housing, urban redevelopment and estate management.

Subsection 3.—Housing Statistics of the 1961 Census*

The tremendous upsurge in building construction in the 1951-61 decade is reflected in the 1961 Housing Census results† which recorded 1,145,198 more occupied dwellings in 1961 than in 1951, the total for Canada in the later year being 4,551,493. The rate of increase in occupied dwellings of 33.6 p.c. exceeded the population increase of 30.2 p.c. in the same period.

Table 21 gives a summary of housing characteristics for Canada in 1951 and 1961. In this period both owned and rented dwellings increased by about one third and single detached dwellings and apartments and flats increased at about the same proportionate rate. The median value of homes was \$11,021 in 1961 and the median monthly cash rent \$62. Almost two out of five dwellings were constructed in the postwar period, a fact reflected in part in the proportion of dwellings in need of repair, which dropped from 13.4 p.c. in 1951 to 5.6 p.c. in 1961.

21.—Housing Characteristics, Censuses of 1951 and 1961

Item		1951 ¹	P.C. of Total	1961	P.C. of Total
Totals, Occupied Dwellings.....	No.	3,409,295	100.0	4,554,493	100.0
Tenure—					
Owner-occupied.....	No.	2,236,955	65.6	3,005,587	66.0
Tenant-occupied.....	"	1,172,340	34.4	1,548,906	34.0
Type—					
Single detached.....	No.	2,275,615	66.7	2,978,501	65.4
Apartments, flats.....	"	885,565	26.0	1,151,098	25.3
Dwellings by period of construction—					
Before 1920.....	No.	..	..	1,391,719	30.6
1920-1945.....	"	..	..	1,148,389	25.2
Since 1945.....	"	..	..	2,014,385	44.2
Dwellings in need of major repair.....	No.	457,570	13.4	255,414	5.6
Av. rooms per dwelling.....	No.	5.3	...	5.3	...
Av. bedrooms per dwelling.....	"	...	...	2.7	...
Crowded dwellings².....	"	641,820	18.8	750,942	16.5
Median value.....	\$	..	..	11,021	...
Dwellings with mortgage³.....	No.	394,910	29.3	979,966	45.5
Median monthly cash rent⁴.....	\$	34	...	62	...
Dwellings heated principally by—					
Coal or wood.....	No.	2,387,375	70.0	1,062,751	23.3
Oil.....	"	774,535	22.7	2,565,416	56.3
Gas.....	"	163,165	4.8	857,953	18.8
Dwellings with—					
Steam or hot water furnace.....	No.	529,465	15.5	829,984	18.2
Hot air furnace.....	"	1,052,570	30.9	2,242,237	49.2
Hot and cold running water.....	"	1,939,770	56.9	3,650,115	80.1
Bath or shower.....	"	2,072,975	60.8	3,659,520	80.3
Flush toilet.....	"	2,328,855	68.3	3,880,512	85.2
Mechanical refrigerator.....	"	1,594,980	46.8	4,145,086	91.0
Passenger automobile.....	"	1,442,595	42.3	3,114,677	68.4

¹ Exclusive of the Yukon and Northwest Territories.

² Dwellings in which the number of persons

exceeded the number of rooms.

³ Figures relate to owner-occupied, single detached, non-farm dwellings

only.

⁴ Figures relate to non-farm dwellings only.

Table 22 gives certain 1961 housing characteristics by province. Among the provinces, Alberta had the largest proportionate gain over 1951, recording an increase of 39.5 p.c. and 99,059 dwellings; Ontario was first numerically with 459,625 more dwellings in 1961 than in 1951, an increase of 38.9 p.c. Saskatchewan had the largest proportion of the single detached type in 1961, 85.7 p.c. of its occupied dwellings being in that category. On the other hand, 49 p.c. of Quebec's dwellings were apartments or flats, the highest

* More detailed information may be found in Vol. 11 (Part 2) of the 1961 Census (Catalogue Nos. 93-523 to 93-535).

† Based on a 20-p.c. sample of occupied dwellings across Canada. A dwelling, for census purposes, is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside. The entrance must not be through anyone else's living quarters.

among the provinces. The largest homes were in Prince Edward Island where they had an average of 6.4 rooms and 3.3 bedrooms. The smallest were in British Columbia and the Prairie Provinces where they averaged 4.9 rooms and 2.4 bedrooms (2.5 bedrooms in Saskatchewan). Crowded homes (those in which the number of persons exceeded the number of rooms) were most in evidence in Newfoundland where about three out of ten were thus classified. The proportion of such homes was lowest in Ontario at 11.8 p.c.

22.—Housing Characteristics, by Province, Census 1961

Province or Territory	Total Occupied Dwellings	Type of Dwelling		Period of Construction		In Need of Major Repair	Average Rooms	Average Bed-rooms	Crowded Dwellings ¹
		Single De-tached	Apart-ments, Flats	Before 1920	Since 1945				
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	87,940	73,738	5,170	21,168	42,853	4,783	5.9	3.2	26,254
Prince Edward Island.....	23,942	19,427	2,259	13,867	5,117	1,357	6.4	3.3	4,080
Nova Scotia.....	175,340	134,715	25,187	83,465	53,858	15,158	5.8	3.0	31,832
New Brunswick.....	132,714	95,772	25,906	57,822	44,439	15,977	5.9	3.0	27,836
Quebec.....	1,191,368	467,716	583,983	357,568	531,863	49,392	5.3	2.8	259,985
Ontario.....	1,640,750	1,140,653	324,859	573,071	705,528	74,127	5.5	2.7	194,343
Manitoba.....	239,754	190,171	37,115	75,417	98,039	18,505	4.9	2.4	40,261
Saskatchewan.....	245,424	210,253	22,390	69,260	97,071	22,117	4.9	2.5	45,967
Alberta.....	349,809	272,069	54,919	64,979	192,635	27,116	4.9	2.4	61,308
British Columbia.....	459,532	367,663	68,632	74,740	236,865	25,309	4.9	2.4	55,484
Yukon and North-west Territories..	7,920	6,324	678	362	6,117	1,573	3.4	1.5	3,592
Canada.....	4,554,493	2,978,501	1,151,098	1,391,719	2,014,385	255,414	5.3	2.7	750,942

¹ Dwellings in which the number of persons exceeded the number of rooms.

As shown in Table 23, Newfoundland had the largest proportion of owner-occupied dwellings in 1961 with 87.2 p.c., followed by Prince Edward Island with 79.2 p.c.; Quebec had the smallest proportion with 49.0 p.c. However, of owner-occupied, single detached, non-farm dwellings with mortgage, Ontario had the highest percentage (53.5) and Newfoundland the lowest (7.9).

The median value of homes ranged from \$4,311 in Newfoundland to \$12,952 in Ontario and the average cash rent from \$48 in Prince Edward Island and New Brunswick to \$76 in Ontario. Average gross rent, including amounts paid monthly for services such as water, electricity, gas or fuel, ranged from \$66 in New Brunswick to \$87 in Ontario.

23.—Tenure of Occupied Dwellings, Value and Rent, by Province, Census 1961

Province or Territory	Owned Dwellings			Rented Dwellings		
	Total	Median Value ¹	Dwellings with Mortgage ¹	Total	Average Cash Rent ²	Average Gross Rent ²
	No.	\$	No.	No.	\$	\$
Newfoundland.....	76,691	4,311	5,313	11,249	55	77
Prince Edward Island.....	18,958	5,310	2,786	4,984	48	67
Nova Scotia.....	131,405	5,873	27,322	43,935	57	74
New Brunswick.....	94,022	5,382	16,860	38,692	48	66
Quebec.....	583,981	10,004	158,518	607,387	59	72
Ontario.....	1,157,229	12,952	472,959	483,521	76	87
Manitoba.....	176,156	10,396	53,341	63,598	64	74
Saskatchewan.....	188,226	7,396	30,543	57,198	55	69
Alberta.....	248,537	12,116	80,732	101,272	65	75
British Columbia.....	326,090	11,744	131,321	133,442	65	78
Yukon and Northwest Territories.....	4,292	2,188	271	3,628	61	77
Canada.....	3,005,537	11,621	979,966	1,548,906	65	77

¹ Figures relate to owner-occupied, single detached, non-farm dwellings only.

² Figures relate to non-farm dwellings only, regardless of type.

CHAPTER XVI.—LABOUR*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—The Government in Relation to Labour

Subsection 1.—The Federal Department of Labour and Federal Labour Legislation

The Department of Labour.—The federal Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds. Since that time the Department has been charged with the administration of new legislation and has taken on new functions. Its work today falls very broadly into two main areas—industrial relations and manpower supply.

The legislation it administers in the industrial relations area applies to employers, workers and trade unions under federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, the investigation of complaints of unfair labour practices, refusals to bargain and violations of legislation, the processing of applications for the certification and decertification of trade unions and the conducting of representation votes. It determines wage rates and hours of work in Federal Government contracts for construction or supplies, and promotes joint labour-management consultation. It also administers legislation to prevent discrimination in employment based on race, religion, colour or national origin, to provide for equal pay for female employees and to provide for annual vacations with pay.

* Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Department of Labour, Ottawa.

In the manpower supply area the Department has been increasingly concerned with promoting the best use of all available manpower resources. Under federal-provincial agreements, assistance is provided to the provinces for the construction and equipping of technical and vocational schools and for the operation of a variety of training programs, including training for the unemployed in provincially organized courses. The Department is responsible for the co-ordination of the national program for the vocational rehabilitation of the civilian disabled, and provides financial assistance, also under federal-provincial agreements, to provincial rehabilitation programs.

To stimulate winter activity and so increase winter employment it organizes, in co-operation with the National Employment Service, the annual nation-wide, "Do It Now" winter employment campaign to persuade home and business owners to plan inside renovation and repair work for the cold months. It is also responsible for the Municipal Winter Works Incentive Program, through which the Federal Government contributes toward winter works projects undertaken by municipalities.

Research, involving regular surveys and analyses of economic and social trends affecting the labour force, is an important part of its work. It studies wages and working conditions, employment and unemployment, particular occupations, the training and utilization of manpower, union organization and collective bargaining.

Through the Women's Bureau and the Division on Older Workers, it investigates the problems of women and of older persons in the labour force. It assists in the movement of farm workers between provinces and between Canada and the United States, under federal-provincial agreements. It operates a plan of workmen's compensation for seamen on Canadian ships, and arranges workmen's compensation for Federal Government employees.

The Department publishes the monthly *Labour Gazette*, maintains records of labour legislation in the provinces and in other countries and operates a labour lending library. It provides liaison between the International Labour Organization and the federal and provincial governments, and is responsible for the sale and administration of Canadian Government annuities.

Federal Labour Legislation.—Fair Wages Policy.—The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act and Order in Council P.C. 2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight per day and 44 per week, except in an emergency or in special circumstances where exemption is granted by Order in Council wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council P.C. 2029. The hours of such work must be those fixed by the custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed. This Order in Council contains a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

Government Prevailing Rate Employees.*—Many departments and agencies of government employ non-office workers in public buildings, defence establishments, parks and

* Statistics on numbers and earnings of prevailing rate and other groups of federal employees exempt from the Civil Service Act are given at pp. 134-139.

forests, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Such positions are exempt from the operations of the Civil Service Act and rates of pay are fixed by the Treasury Board in consultation with the Department of Labour on the basis of prevailing private industry rates for comparable work in the appropriate area. Data used in the determination of these pay rates are secured from wage surveys made by Industrial Relations Officers of the Department of Labour, from wage research conducted by the Economics and Research Branch, and from collective agreements and wage rates established under the legislation of some provinces.

The Fair Wages and Prevailing Rates Division of the Industrial Relations Branch also recommends rates of pay for 4,000 commissionaires employed by various government departments and agencies throughout Canada, provides wage data to assist certain Crown corporations in the preparation of their wage schedules, and gives assistance in the establishment of class titles, job descriptions and the application of job evaluation techniques.

Three sets of comprehensive Regulations have been established by the Treasury Board governing hours of work, overtime, vacations, statutory holidays, sick leave, pensions, etc., for (1) prevailing rate workers generally employed, (2) ships' officers and (3) ships' crews.

The Industrial Relations and Disputes Investigation Act.—This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are set down in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes.

The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions affecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith.

The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents, the writing of a procedure into a collective agreement for the

final settlement of disputes concerning the meaning or violation of such agreement, and the investigation of complaints made to the Minister that a party has failed to bargain collectively.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Department of Labour. In brief, from Sept. 1, 1948 to Dec. 31, 1962, the Canada Labour Relations Board received 1,390 applications for certification, 819 of which were granted, 289 rejected, 276 withdrawn and six were pending at the end of the period. Of the 903 industrial disputes dealt with under the conciliation provisions of the Act, 799 were settled by conciliation officers and conciliation boards, 55 were not settled, 25 lapsed and 24 were pending at Dec. 31, 1962.

Labour-Management Co-operation Service.—During World War II, production committees based on the principle of joint consultation between labour and management were established in many vital industries. Since 1947 the establishment of labour-management committees in industry has been encouraged and assisted by the Labour-Management Co-operation Service, a division of the Industrial Relations Branch of the Department of Labour. The number of active committees has grown from 526 in 1947 to 1,754 at Dec. 31, 1962. Their activities are directed toward such objects as better understanding between management and labour, improved production efficiency, improved quality, reduction of waste, accident prevention, good housekeeping and reduction of absenteeism.

Reinstatement in Civil Employment Act.—This Act provides for the reinstatement in their civil employment of discharged members of the Armed Forces and other designated persons. It was originally passed in 1942, revised in 1946, and broadened in its application in 1954. The Act is administered by the Minister of Labour through the National Employment Service (see p. 736).

Canada Fair Employment Practices Act.—This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction—those covered by the Industrial Relations and Disputes Investigation Act (see p. 705). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies that practise discrimination; and the use of advertisements or inquiries in connection with employment that express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

Female Employees Equal Pay Act.—This Act came into effect on Oct. 1, 1956, and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

Annual Vacations Act.—This Act was passed in January 1958 and became effective by proclamation on Oct. 1, 1958. It provides a one-week vacation with pay for the first year of employment and a two-week vacation for subsequent years. Vacation pay is computed at 2 p.c. of wages, as defined in the Act, for a vacation of one week and 4 p.c. for a vacation of two weeks.

Subsection 2.—Provincial Labour Legislation

Because of the authority given by the British North America Act to the provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights in the province, power to enact labour legislation is largely the

prerogative of the provinces. Since it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights. Under this authority, the provincial legislatures have enacted a large body of legislation affecting the employment relationship in such fields as working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations, workmen's compensation and other matters. In each province a Department of Labour is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a Workmen's Compensation Board appointed by the Lieutenant-Governor in Council.

As a means of ensuring adequate living standards for workers, all provinces have enacted minimum wage legislation. These laws vest in a minimum-wage-fixing board authority to set minimum wages for employees. Five provinces have general hours-of-work laws, which either limit daily and weekly working hours or require the payment of an overtime rate if work is continued beyond specified daily and weekly hours.

Hours of work are also restricted and minimum wages established for certain types of employment under industrial standards legislation in Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta, under the Manitoba Fair Wage Act and under the Quebec Collective Agreement Act. Industrial standards legislation establishes a procedure whereby a schedule of minimum wages and maximum hours of labour may be put into effect for a trade or industry in a given area. Under these laws a conference is convened by the Minister of Labour on the request of employer or employee representatives in an industry. If at such conference "a proper and sufficient representation" of the employers and employees affected agree on wages and hours conditions, the government may declare them legally binding on the entire industry in the district concerned. In Manitoba, the Fair Wage Act provides similar machinery for fixing wages and hours. Although the Act may be applied in other industries, its application has been confined to the construction industry. The Quebec Collective Agreement Act enables the wages, hours, vacations, apprenticeship and social security benefit provisions of a collective agreement to be made applicable by decree to all employers and employees in the industry throughout the province or in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. As with industrial standards schedules, the standards made binding by the decree are minimum standards.

Eight provinces have passed annual vacations laws. In four provinces employees have a right to an annual vacation with pay of one week after a year of employment, and in the remaining four a two-week vacation must be granted after one year of service. In most provinces there is legislation setting a minimum age for the employment of young workers in various industries and occupations. A weekly day of rest is provided for by law in most provinces. In two provinces there are statutory requirements regarding the observance of certain public holidays.

Factory Acts in eight provinces establish safeguards for the protection of the health and safety of workers in factories with respect to such matters as sanitation, heating, lighting, ventilation and the guarding of dangerous machinery. Long-established laws regulating the design, construction, installation and operation of mechanical equipment such as boilers and pressure vessels, elevators and lifts and electrical installations, have been revised in recent years in line with technological changes, and legal standards have been set in new fields involving hazards to workers and the public, such as the use of gas- and oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring measures to be taken to eliminate accidents in construction and excavation work are in force in a number of jurisdictions.

All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for the issue of certificates of qualification, on application, to qualified tradesmen in certain trades. In some provinces legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

In all provinces there is legislation similar in principle to the federal Industrial Relations and Disputes Investigation Act, designed to establish equitable relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and make compulsory collective bargaining between an employer and the certified trade union representing his employees. Except in Saskatchewan, they provide for compulsory conciliation, that is, they require the parties to comply with the conciliation procedures laid down in the Act before a strike or lockout may legally take place. A two-stage conciliation process is provided for—the intervention of a conciliation officer at the first stage of a dispute and, failing settlement, the establishment of a conciliation board. The Acts also provide for the compulsory settlement of any dispute that arises out of a collective agreement, and prohibit strike action while an agreement is in force. All prescribe and provide penalties for unfair labour practices. In some provinces certain classes of employees who are engaged in essential services, such as policemen and firemen, are forbidden to strike and, in lieu of the right to strike, have recourse to final and binding arbitration.

Six provinces have adopted fair employment practices laws forbidding discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. The same six provinces have laws providing that places to which the public is customarily admitted must be open to all without regard to race, colour, religion or national origin. Eight provinces have equal pay laws, which forbid discrimination in rates of pay solely on the basis of sex. The Ontario anti-discriminatory legislation has been consolidated in the Ontario Human Rights Code, 1961-62, which is administered by the Ontario Human Rights Commission.

Workmen's compensation legislation providing a system of collective liability on the part of employers for accidents occurring to employees in the course of their employment are in force in all provinces. Workmen's compensation laws are described in greater detail on pp. 744-745.

Changes in 1962.—In 1962 there were a number of important changes in provincial labour laws.

In British Columbia, a new Payment of Wages Act was passed to give workmen greater assurance of payment of wages. In addition to requiring wages to be paid not less often than twice a month, a new wages recovery procedure, to be administered by the Board of Industrial Relations, made it an offence for an employer to issue an NSF cheque in payment of wages, and gave the Board authority to order employers to be bonded. In Manitoba, provision was made, by amendment to the Employment Standards Act, for the bonding of the employer to provide security for the payment of wages.

Major amendments were made to the labour relations laws of Ontario, Manitoba and Prince Edward Island. The Ontario amendments dealt in large part with labour relations in the construction industry, and were designed to expedite certification and conciliation proceedings in view of the usual short-term employment in the industry. In Manitoba, trade unions and employers' organizations were declared to be legal entities, liable in damages for a breach of a collective agreement or for a violation of the Labour Relations Act. Provision was also made for the appointment of a mediator, to be selected and paid

by the parties, as an alternative to the regular conciliation procedure, and for the enforcement of the Act through Crown prosecutions. Previously, only prosecutions instituted by the aggrieved party were provided for. Another amendment requires all strike votes to be conducted by the Manitoba Labour Board. The Prince Edward Island Act was replaced by a new statute which follows more closely the general pattern of labour relations laws in Canada.

A new Construction Safety Act in Ontario, to be enforced by municipal inspectors, and a revised Act with the same title in Manitoba are designed to promote safe practices in all phases of construction work, by prescribing minimum standards as to equipment and precautions to be observed by employers and workmen. The scope of the New Brunswick Factory Act was extended to cover the construction industry and, because of its wider application, the name of the Act was changed to the Industrial Safety Act. In Alberta, the Factories Act was repealed and factory inspection services were assigned to the Workmen's Compensation Board and a new Elevators and Fixed Conveyances Act was passed, applicable to lifting devices in all parts of the province. In Manitoba, the provisions of the Employment Standards Act having to do with the safety of employees in factories were extended to cover all types of employment. The Labour Safety Council of Ontario, created by an amendment to the Department of Labour Act, is to act in an advisory capacity to the Minister of Labour on matters affecting the safety of workers. The New Brunswick Industrial Safety Council was set up to promote and co-ordinate industrial safety activities in that province.

Workmen's compensation Acts were amended in five provinces. Important changes in New Brunswick were the upgrading of existing pensions to disabled workmen and the raising of the age limit to which children's allowances are payable, if they continue to attend school, from 18 to 21 years. In Newfoundland and Prince Edward Island, a one-day waiting period was adopted. Widows' and children's compensation payments were increased in Nova Scotia, New Brunswick and Saskatchewan. The maximum annual earnings on which compensation may be paid were raised from \$3,600 to \$4,200 in Nova Scotia and from \$4,000 to \$5,000 in Prince Edward Island.

Further information about legislative changes in 1962 may be found in the *Labour Gazette*, September and November issues, 1962.

Regulation of Hours and Annual Vacations.—The Provinces of Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have statutes of general application limiting working hours. The Acts are of two types. Those of Ontario, Alberta and British Columbia set actual limits on daily and weekly hours, and provide that work may not be carried on beyond those limits except with the permission of the administrative authority. The Manitoba and Saskatchewan Acts regulate hours through the requirement that one and one half times the regular rate must be paid if work is continued after specified limits. Hours are also regulated under the Industrial Standards Acts, the Manitoba Fair Wage Act and the Quebec Collective Agreement Act (see p. 712) and there is, in addition, some regulation of hours under other legislation, such as factories Acts, mines Acts and, in Newfoundland, legislation governing shops.

In Ontario, working hours are limited to eight in a day and 48 in a week. In Alberta, the maximum daily and weekly hours permitted to be worked in all centres with a population of over 5,000 are eight and 44, and in the remainder of the province they are eight and 48. In British Columbia, hours are limited to eight in a day and 44 in a week. Under the Saskatchewan law, one and one half times the regular rate must be paid for work done after eight hours in a day and 44 hours in a week, except in workplaces (other than factories) in the smaller centres, where the overtime rate must be paid after a 48-hour week. In addition to the above, the Lieutenant-Governor in Council has authority to limit daily hours in any class of employment in order to prevent the working of excessive hours;

this authority has been used to limit daily hours to 12 in highway construction and maintenance. The Manitoba Act, which applies to the chief industrial areas of the province, requires one and one half times the regular rate to be paid after eight hours in a day and after 48 hours in a week for men and 44 hours for women. The Manitoba and British Columbia Acts cover specified industries but the other three Acts apply to most industries in the province concerned.

Seven provinces—Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have annual vacations legislation applicable to most industries, and the New Brunswick Vacation Pay Act applies to construction, mining, including the peat-moss industry, and the canning and packing of fish, vegetables and fruit. In Nova Scotia, New Brunswick, Quebec and Ontario, workers are entitled to a vacation with pay of one week after a year of service; in the four western provinces, a vacation of two weeks with pay must be granted after a year of employment. In Saskatchewan, a worker becomes eligible for a vacation of three weeks after five years of service with the same employer. A worker employed for less than a year is entitled, in Quebec, to a half-day for each month of employment and, in Saskatchewan, to one day for every month. Coal miners in Alberta are entitled to a vacation of one day for every 20 days worked in a month but not more than two weeks in a year.

A stamp system of vacation pay credits is in effect for the construction industry in Alberta and Nova Scotia. In Ontario, the stamp system is used in any industry (including construction) in which employment is terminated during a working year. In Manitoba, vacation pay of transitory construction workers in Greater Winnipeg is deposited by employers with the Department of Labour and disbursed to employees by cheque after the first day of July in each year.

Farm workers are excluded from the vacation provisions in all provinces, and domestic servants in all but Manitoba and Saskatchewan. In addition, Quebec exempts employees of municipal and school corporations, janitors and caretakers, salesmen with less than three months experience and certain part-time workers; Ontario exempts professional workers, flower, fruit and vegetable growers, and funeral directors and embalmers; Nova Scotia excludes workers engaged in lumbering and commercial fishing; Alberta exempts salesmen; Manitoba and Saskatchewan exclude ranch and market garden employees; and British Columbia exempts professional workers and horticultural workers. Workers covered by decrees under the Quebec Collective Agreement Act are excluded from the vacation order and are subject to the annual vacation provided for in the decree concerned.

Minimum Wage Regulations.—All provinces have minimum wage legislation but in Nova Scotia the law applies only to women workers, and in Ontario, although the Act applies to both sexes, minimum wage rates have been set for women only. In Prince Edward Island, no minimum rates are in effect under the law applying to male workers; under the Women's Minimum Wage Act rates have been set for only one group of employees—waitresses and other restaurant workers in Charlottetown and Summerside. In New Brunswick, minimum rates have been established for most women workers; they have been fixed for men in certain industries only—logging, sawmilling, the garment industry and the canning or processing of fish, vegetables or fruit. With these exceptions, minimum wage laws and orders apply to both sexes and, except in Newfoundland, set the same rates for male and female workers. In Newfoundland, New Brunswick and British Columbia, minimum rates apply throughout the province. Elsewhere (excluding Prince Edward Island) there are regional differentials in minimum rates. Weekly rates are set in some provinces, hourly rates in others.

Table 1 shows the minimum rates in effect on Jan. 1, 1963, for several classes of establishment in the principal cities.

1.—Minimum Wage Rates for Experienced Workers in Certain Cities, by Sex, Jan 1, 1963

Item, Type of Establishment and Sex	St. John's, Nfld.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, B.C.
Maximum hours per week to which the rates apply.	M. 48 F. 48	— 48	— 48	48 ¹ 48 ¹	— 48	48 44	44 44	44 44	44 44
	cts. per hour	\$ per week	cts. per hour	cts. per hour	\$ per week	cts. per hour	\$ per week	\$ per week	cts. per hour
Factories.....	M. 50 F. 35	— 21.60	65 ² 60	70 70	— 30	66 66	34 34	34 34	\$1 \$1
Laundries, etc.....	M. 50 F. 35	— 21.60	— 60	70 70	— 30	66 66	34 34	34 34	75 75
Shops.....	M. 50 F. 35	— 21.60	— 60	70 70	— 30	66 66	34 34	34 34	\$1 \$1
Hotels, restaurants, ³ etc.	M. 50 F. 35	— 21.60	— 55	64 ⁴ 64	— 30	66 66	34 34	34 34	\$1 \$1
Beauty parlours.....	M. 50 F. 35	— 21.60	— 60	70 70	— 30	66 66	34 34	34 34	35 ⁵ 35 ⁵
Theatres and amusement places.	M. 50 F. 35	— 21.60	— 60	70 70	— 30	66 66	34 34	34 34	75 75
Offices.....	M. 50 F. 35	— 21.60	— 60	70 70	— 30	66 66	34 34	34 34	75 75

¹ In hotels and restaurants the rates apply to a maximum of 54 hours per week. ² Applies only to canning or processing of fish, vegetables or fruit; 60 cents in the garment industry for 48 hours or less in a week. ³ Minimum wage orders in Prince Edward Island applying to female restaurant workers in Charlottetown and Summerside set a minimum rate of \$21 a week for waitresses, \$16 for other restaurant workers in Charlottetown, \$23 for cashiers in Summerside. ⁴ Chauffeurs, watchmen, stationary enginemen and firemen 70 cents; bell boys 56 cents. ⁵ Dollars per week.

Regulation of Wages and Hours of Work under Industrial Standards Legislation and the Quebec Collective Agreement Act.—Industrial Standards Acts are in effect in Nova Scotia, New Brunswick, Ontario and Saskatchewan and there are similar provisions in the Alberta Labour Act (Part IV). These provide that a schedule of wage rates and hours of work agreed upon by a representative group of employees and employers in an industry may, upon approval by the government, be given statutory effect by Order in Council, to become the minimum terms of employment for the entire industry in the area. This legislation applies only to certain trades and areas in the province concerned. It has been used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule.

The Nova Scotia Act applies only to construction work in Halifax, Dartmouth and Sydney; 12 schedules of wages and hours for individual building trades were in force during the year ended Mar. 31, 1962. In New Brunswick, four schedules covering an individual building trade or group of such trades were in effect in the same period.

At the end of March 1962, there were 148 schedules in force under the Ontario Industrial Standards Act. Of these 71 applied to the building trades, 67 to barbering, and four to the retail gasoline service industry. Five schedules for the garment industries and one for hard furniture applied throughout the province. During the year the fur industry and hairdressing were designated as industries under the Act.

In Saskatchewan, 16 schedules were in effect on Mar. 31, 1962, covering barbering, beauty culture, baking, carpentry, painting and the electrical trade. The schedule for barbering covered the whole province except the cities of Regina and Saskatoon, for each of which a separate schedule was in effect. Each of the other schedules applied to a zone consisting of a city and its environs. In Alberta, 15 schedules were in force at the end of

the year 1962. These governed, in one or more areas, certain building trades, dairy employees, garage and service station workers, and bakers and bakery salesmen. In Manitoba, the Fair Wage Schedule issued annually under the Fair Wage Act for the construction industry sets a regular work week and hourly rates of wages for various classifications of workers. The schedule applies to private construction work in the larger centres of population as well as to public construction work throughout the province.

In the Province of Quebec, 105 decrees under the Collective Agreement Act were in force on Mar. 31, 1962, governing 34,387 employers and 240,924 employees. Of the 105 decrees, 18 applied to barbers and hairdressers, 21 to commercial establishments, 16 to the construction industry, 26 to manufacturing, and 24 to other industries and services. Fifteen of the decrees had province-wide jurisdiction, governing the manufacture of women's coats and suits, dresses, hats and handbags, men's and boys' clothing, hats and caps and shirts, the manufacture of shoes, leather gloves, furniture, paint, corrugated paper boxes and caskets, the tanning industry and the building materials industry. The remaining decrees regulated an industry in a particular urban centre or region of the province. Each decree is enforced by a parity committee which has power to levy an assessment on employers and employees to obtain funds for the enforcement of the decree.

Section 2.—The Labour Force*

A current and periodic analysis of the state of employment in Canada was organized in 1945 to provide up-to-date and reliable information concerning the Canadian labour force. A labour force survey, on a sample basis, was conducted in November 1945 and quarterly surveys were carried out thereafter until November 1952, when the survey was placed on a monthly basis. A multi-stage area sample was used involving the selection of progressively smaller sample areas and ultimately of households. Random methods of choice were used at every stage of selection so that all members of the population had an equal chance of inclusion. The present sample covers more than 36,000 households in about 170 different areas of Canada. The estimates of the labour force are restricted to the civilian labour force. In addition to members of the Armed Forces, inmates of institutions and Indians living on reservations are excluded.

The labour force surveys provide a classification of persons 14 years of age or over on the basis of their activity during the week preceding the beginning of interviewing for the survey. The main divisions of the population are defined as follows:—

Labour Force.—The civilian labour force is composed of that portion of the civilian non-institutional population 14 years of age or over who, during the survey week, were employed or unemployed.

Employed.—The employed include all persons who, during the survey week: (a) did any work for pay or profit; (b) did any work which contributed to the running of a farm or business operated by a related member of the household; or (c) had a job but were not at work because of bad weather, illness, industrial dispute, or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the survey week and who also looked for work are included in the unemployed as persons without work and seeking work.

Unemployed.—The unemployed include all persons who, through the survey week: (a) were without work and seeking work, i.e., did no work during the survey week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; or (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

Not in the Labour Force.—Those not in the labour force include all civilians 14 years of age or over (exclusive of institutional population) who are not classified as employed or unemployed. This category includes those going to school, keeping house, too old or otherwise unable to work, and voluntarily idle or retired. Housewives, students and others who worked part time are classified as employed. If they looked for work they are classified as unemployed.

* Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

The estimates derived from the labour force surveys are subject to sampling error. In general, the percentage of error tends to decrease as the size of the estimate increases. The chances are about 19 out of 20 that the difference between the estimate and the figure which would have been obtained from a complete count is less than shown below. The sampling variabilities indicated are averages, since sampling error differs from characteristic to characteristic; in particular, for the unemployed the sampling variability is about 40 p.c. higher than the general average.

<i>Size of Estimate</i>	<i>Sampling Variability</i>
10,000.....	3,500
50,000.....	8,000
100,000.....	11,000
500,000.....	24,000
1,000,000.....	33,000
5,000,000.....	58,000
6,000,000.....	60,000

2.—Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1946 and 1953-62

NOTE.—Comparable figures for 1947-52 are given in the 1962 Year Book, p. 708. Figures do not include inmates of institutions and Indians on reservations. Newfoundland is included from 1950 only.

Year	Civilian Popu- lation (14 years of age or over)	Civilian Labour Force (14 years of age or over)							Persons not in the Labour Force (14 years of age or over)
		Employed					Un- employed	Total Labour Force	
		Non-agriculture			Agri- culture	Total (non-agri- cultured)			
		Paid Workers	Other	Total (non-agri- culture)					
	'000	'000	'000	'000	'000	'000	'000	'000	'000
1946.....	8,779	2,990	490	3,480	1,186	4,666	163	4,829	3,950
1953.....	10,164	3,842	535	4,377	858	5,235	162	5,397	4,767
1954.....	10,391	3,840	525	4,265	878	5,243	250	5,493	4,898
1955.....	10,597	4,027	519	4,546	819	5,364	245	5,610	4,987
1956.....	10,805	4,286	523	4,809	776	5,585	197	5,782	5,023
1957.....	11,108	4,440	542	4,981	744	5,725	278	6,003	5,105
1958.....	11,357	4,454	529	4,983	712	5,695	432	6,127	5,230
1959.....	11,562	4,615	548	5,163	692	5,856	373	6,228	5,334
1960.....	11,789	4,727	553	5,280	675	5,955	448	6,403	5,386
1961.....	12,010	4,798	577	5,375	674	6,049	469	6,518	5,492
1962.....	12,224	4,978	587	5,564	653	6,217	391	6,608	5,616

Characteristics of the Civilian Labour Force, 1946-62.—The civilian non-institutional population averaged 12,224,000 in 1962 compared with 8,779,000 in 1946, an increase of 39.2 p.c., and during the same period the labour force rose by only 37.1 p.c. to 6,608,000. Thus, the proportion of the population 14 years of age or over in the labour force, which was 55.0 p.c. in 1946, dropped to 54.1 p.c. in 1962. Contributing to this decrease were such factors as shifts in the age composition of the population, the tendency for young people to remain in school until they are a little older and the tendency for older persons to retire at an earlier age. The effect of these factors was greater among men, whose rate of labour force participation dropped from 85.2 p.c. in 1946 to 79.3 p.c. in 1962. Although the growth in the female labour force was also affected by these factors, there was an offsetting development. From 1953 there was a rapid increase in job opportunities for women, particularly married women. The female participation rate dropped slightly

from 24.7 p.c. in 1946 to 23.4 p.c. in 1953 and then rose to 29.1 p.c. in 1962. During the 1953-62 period, the participation rate for the female group 25-44 years of age rose from 23.1 p.c. to 29.7 p.c. and for the 45-64 age group from 17.2 p.c. to 29.4 p.c. In 1962, women in the labour force numbered 1,789,000, about half of whom were married (excluding widowed, divorced and separated). Total employment in that year averaged 6,217,000, an increase of 33.2 p.c. over 1946. The number of men employed (4,487,000) was 24.3 p.c. higher and the number of women employed (1,730,000) was 63.7 p.c. higher.

Between 1946 and 1962, employment in agriculture dropped from 1,186,000 to 653,000, a decline of 44.9 p.c. On the other hand, employment in non-agricultural industries increased by 59.9 p.c. from 3,480,000 to 5,564,000 and the number of paid workers employed in non-agricultural industries rose by 66.5 p.c. from 2,990,000 to 4,978,000. Important changes also occurred in the distribution of employment among industries. In 1962, the goods-producing industries accounted for 45 p.c. and the service-producing industries for 55 p.c. of total employment compared with 60 p.c. and 40 p.c., respectively, in 1946. The most notable shift was in agriculture. In 1946, about one in four employed persons worked in agriculture whereas in 1962 the proportion was one in ten. In other primary industries the proportion employed also declined substantially but in manufacturing it remained about the same. In all other industry groups the proportion employed was higher in 1962 than in 1946. In the later year, almost one out of every two employed women worked in service industries as compared with one out of every three in 1946.

On an annual average basis, unemployment as a percentage of the labour force fluctuated widely during the period, ranging between 2.2 p.c. in 1947 and 7.2 p.c. in 1961; it averaged 5.9 p.c. in 1962. Throughout the period, unemployment rates were substantially lower for women than for men.

The number of persons 14 years of age or over not in the labour force averaged 5,616,000 in 1962 compared with 3,950,000 in 1946, an increase of 42 p.c. Housewives and students together constituted more than 80 p.c. of the total in the later year; the number of women keeping house increased by almost one third during the period and the number of students more than doubled.

3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946 and 1953-62

NOTE.—Comparable figures for 1947-52 are given in the 1962 Year Book, pp. 710-711. Newfoundland included from 1950 only.

Year	Popu- lation (14 years of age or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unem- ployed	Total	Women Keeping House	Persons Going to School	Other	Total
		Agri- culture	Non- agri- culture						
MALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946.....	4,400	23.4	58.7	3.1	85.2	...	5.5	9.3	14.8
1953.....	5,075	16.1	64.0	2.8	82.9	...	5.6	11.5	17.1
1954.....	5,188	16.2	61.8	4.2	82.2	...	5.8	12.0	17.8
1955.....	5,290	14.8	63.3	4.0	82.1	...	6.0	11.9	17.9
1956.....	5,397	13.6	65.4	3.2	82.2	...	6.2	11.6	17.8
1957.....	5,552	12.7	65.2	4.4	82.3	...	6.3	11.4	17.7
1958.....	5,671	11.6	63.4	6.7	81.7	...	6.8	11.5	18.3
1959.....	5,767	11.2	64.3	5.6	81.1	...	7.3	11.6	18.9
1960.....	5,876	10.6	63.6	6.6	80.8	...	7.6	11.6	19.2
1961.....	5,980	10.3	62.9	6.8	80.0	...	8.1	11.9	20.0
1962.....	6,078	9.7	64.1	5.5	79.3	...	8.6	12.1	20.7

3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946 and 1953-62—concluded

Year	Popu- lation (14 years of age or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unem- ployed	Total	Women Keeping House	Persons Going to School	Other	Total
		Agri- culture	Non- agri- culture						
FEMALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946.....	4,379	3.6	20.5	0.6	24.7	63.2	5.1	7.0	75.3
1953.....	5,089	0.8	22.2	0.4	23.4	66.7	5.3	4.6	76.6
1954.....	5,203	0.8	22.3	0.6	23.7	66.5	5.3	4.5	76.3
1955.....	5,306	0.7	22.6	0.6	23.9	66.0	5.5	4.6	76.1
1956.....	5,408	0.7	23.7	0.5	24.9	64.9	5.5	4.7	75.1
1957.....	5,555	0.7	24.5	0.6	25.8	63.9	5.7	4.6	74.2
1958.....	5,686	0.9	24.4	1.0	26.3	63.2	6.1	4.4	73.7
1959.....	5,795	0.8	25.1	0.8	26.7	62.3	6.4	4.6	73.3
1960.....	5,914	0.9	26.1	1.0	28.0	60.9	6.6	4.5	72.0
1961.....	6,030	0.9	26.8	1.1	28.8	59.8	7.0	4.4	71.2
1962.....	6,147	1.0	27.1	1.0	29.1	59.0	7.4	4.5	70.9

4.—Percentage Distribution of the Employed by Industrial Group, 1946 and 1953-62

NOTE.—Comparable figures for 1947-52 are given in the 1962 Year Book, p. 711.

Year	Total Em- ployed	Percentage Distribution							
		Agri- culture	Other Primary Industries	Manu- facturing	Con- struction	Trans- portation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946.....	4,666	25.4	4.0	26.0	4.8	8.1	12.3	2.6	16.8
1953.....	5,235	16.4	3.8	26.4	6.6	9.2	15.6	3.2	18.8
1954.....	5,243	16.8	4.1	25.3	6.4	8.7	15.8	3.2	19.7
1955.....	5,364	15.3	4.5	25.6	6.9	8.7	15.7	3.3	20.0
1956.....	5,585	13.9	4.6	25.7	7.4	8.9	15.8	3.5	20.2
1957.....	5,725	13.0	4.3	26.1	7.6	8.9	15.7	3.6	20.8
1958.....	5,695	12.5	3.7	25.6	7.5	8.9	16.0	3.7	22.1
1959.....	5,856	11.8	3.4	25.5	7.5	8.9	16.2	3.7	23.0
1960.....	5,955	11.3	3.5	24.7	7.0	8.6	16.5	3.8	24.6
1961.....	6,049	11.1	3.0	25.0	6.7	8.4	16.3	4.0	25.5
1962.....	6,217	10.5	2.8	25.2	6.9	8.5	16.1	4.0	26.0

Employment was substantially higher in 1962 than in 1946 in all regions. British Columbia experienced the largest increase of 43.1 p.c. followed by Ontario with 39.5 p.c., Quebec with 32.7 p.c., the Prairie region with 17.3 p.c. and the Atlantic region (excl. Newfoundland) with 10.2 p.c. In all regions, however, the increase in employment was not as great as the growth of the labour force and, as a consequence, there was a rise in unemployment. Unemployment in Canada averaged 391,000 in 1962, 5.9 p.c. of the labour force. The unemployed were distributed regionally as follows: Quebec 35.3 p.c., Ontario 26.6 p.c., Atlantic 16.4 p.c., Prairie 11.5 p.c. and British Columbia 10.2 p.c. In 1946 the unemployed were distributed among the regions in just about the same proportions.

Similarly, unemployment rates were higher in 1962 than in 1946. In the later year, the unemployed as a percentage of the labour force in each of the five regions was as follows: Atlantic 10.7 p.c., Quebec 7.5 p.c., Ontario 4.3 p.c., Prairie 3.9 p.c. and British Columbia 6.7 p.c. From 1946 on, unemployment rates for the Atlantic region and Quebec were consistently higher than the national average and for Ontario and the Prairie region they were consistently lower. The British Columbia rate was above the national average in every year except 1955 and 1956.

5.—Estimates of Employment and Unemployment, by Region, 1946 and 1953-62

NOTE.—Comparable figures for 1947-52 are given in the 1962 Year Book, p. 712.

Year	Atlantic ¹		Quebec		Ontario		Prairie		British Columbia	
	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1946.....	392	23	1,283	54	1,654	48	947	21	390	16
1953.....	478	28	1,480	58	1,907	41	938	18	432	18
1954.....	468	33	1,470	92	1,945	77	925	24	437	24
1955.....	478	33	1,493	98	1,993	66	939	30	462	18
1956.....	489	31	1,535	80	2,096	51	975	22	490	14
1957.....	496	45	1,574	101	2,157	77	988	27	511	27
1958.....	476	68	1,577	153	2,133	122	1,004	43	504	47
1959.....	493	60	1,613	138	2,187	103	1,036	35	526	36
1960.....	507	60	1,632	164	2,239	128	1,053	46	524	50
1961.....	526	66	1,644	168	2,261	132	1,083	52	536	50
1962.....	536	64	1,703	138	2,308	104	1,111	45	558	40

¹ Newfoundland included from 1950.

Section 3.—Employment, Earnings and Hours*

Monthly records of employment have been collected from larger business establishments since 1921. At that time a survey was instituted to provide employment index numbers which would serve as current economic indicators. In 1941 the survey was extended to provide information on payrolls and per capita wages and salaries and in 1944 it was further extended to provide data on hours of work and hourly and weekly wages. During the war period also, separate records for men and women employees were established.

The survey covers firms that usually employ 15 persons or more in all sectors of the following major industrial divisions: forestry; mining; manufacturing; construction; transportation, storage and communication; public utility operation; trade; finance, insurance and real estate. Also included are certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, recreational and business services. The survey excludes agriculture, public administration and community services such as health and education. The coverage corresponds closely, therefore, to the business sector of the economy. Since the survey does not cover small firms and excludes several industries, the employment records are published in the form of index numbers (1949 = 100).

The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees with the exception of homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piecework and time work payments, and such items as shift premiums, and regularly paid production, incentive and cost-of-living bonuses. The statistics on hours relate to the straight and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

Subsection 1.—Employment and Weekly Wages and Salaries

During the interwar period, the composite employment index (1949 = 100) rose steadily from a postwar recession level of 46.9 in 1921 to a high of 62.8 in the boom year of 1929, but the severe depression that followed reduced the annual figure to a low of 44.0

* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

in 1933. Slow recovery in the next six years left the index slightly lower in 1939 than in 1929. With the outbreak of World War II, employment began to increase under the stimulus of production for military requirements. In 1943, a wartime peak of 93.0 was reached, more than 50 p.c. above the 1939 level. A declining tendency that became evident in 1944 persisted after the end of the war. However, the impact of cutbacks in wartime production was cushioned by public demand for goods and services that had been largely unavailable during the war years, so that the over-all loss recorded in 1946 was small. The index showed successive gains from 1947 until a peak of 113.1 was reached in 1953. A slight decline in 1954 was followed by further advances that brought the index to 122.6 in 1957. During the next four years the industrial composite index did not vary greatly, fluctuating around levels some 3 p.c. to 4 p.c. below the 1957 peak.

A general recovery in employment commenced in the second quarter of 1961 and continued through 1962. Employment rose substantially in all the goods-producing industries. Because of the low levels early in 1961, however, the annual averages of employment for that year were lower than in 1960, except in non-durable goods manufacturing. In forestry and mining there have been long-term trends toward reduced levels of employment in particular areas or segments within the divisions, and the gains of early 1961 were not maintained in 1962. Construction was at a fairly low level early in 1961; an upward trend beginning in the second quarter continued into 1962. All service-producing industrial divisions showed employment gains in 1961 and 1962 except transportation, storage and communication. The percentage gains were largest in finance, insurance and real estate and in service.

6.—Annual Average Index Numbers of Employment by Industrial Division, Significant Years 1921-62, and Monthly Indexes 1962

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1949=100.

Year and Month	Forestry (chiefly logging)	Mining	Manufacturing	Construction	Transportation, Storage and Communication	Public Utility Operation	Trade	Finance, Insurance and Real Estate	Service ¹	Industrial Composite
Averages—										
1921.....	51.3	56.1	44.0	30.3	66.5	34.3	41.8	..	34.6	46.9
1926.....	49.5	57.0	49.9	45.1	73.3	41.4	44.7	..	41.1	52.6
1933.....	33.1	55.8	40.5	37.2	56.5	45.1	50.5	..	44.1	44.0
1939.....	59.3	93.7	56.3	62.0	59.8	54.9	61.5	..	56.8	60.1
1940.....	82.2	95.8	65.1	47.1	62.2	55.0	63.7	67.3	57.9	64.7
1945.....	119.7	82.3	100.0	53.8	85.0	61.1	76.2	77.4	81.1	88.8
1949.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	104.8	106.0	101.4	103.1	100.2	101.2	103.6	105.9	101.0	102.1
1953.....	98.3	110.8	113.0	118.1	111.2	112.4	113.1	122.4	108.8	113.1
1954.....	96.3	110.4	107.3	110.6	109.0	116.1	114.8	128.0	111.7	109.9
1955.....	102.9	113.7	109.8	115.0	110.8	119.2	118.7	132.1	115.0	112.9
1956.....	113.2	122.7	115.8	121.8	118.3	126.3	126.3	137.1	125.1	120.7
1957.....	99.3	127.2	115.8	135.7	120.4	133.6	131.8	145.0	131.9	122.6
1958.....	75.9	123.5	109.8	126.2	115.5	137.6	131.6	149.3	135.1	117.9
1959.....	78.9	123.4	111.1	130.3	114.3	138.7	135.3	153.2	139.3	119.7
1960.....	84.0	120.1	109.5	125.7	111.1	137.8	136.7	166.7	143.2	118.7
1961.....	71.6	116.5	108.9	121.7	108.6	138.3	137.8	163.1	148.9	118.1
1962.....	70.9	116.4	113.3	124.3	108.3	141.6	140.6	170.1	156.5	121.4
1962—										
January.....	77.5	114.0	108.5	102.0	102.3	135.8	135.8	167.4	147.7	115.2
February.....	68.2	113.7	108.9	100.1	102.8	135.5	133.7	167.7	147.7	114.7
March.....	47.1	114.3	109.6	103.2	103.4	135.7	135.6	168.4	149.6	115.2
April.....	34.4	113.3	110.4	112.3	105.9	136.7	137.7	168.5	152.0	116.7
May.....	51.9	117.8	113.7	127.5	109.3	141.9	139.6	168.2	157.7	121.3
June.....	75.0	121.0	116.4	137.8	110.0	145.2	141.2	169.3	163.3	125.0
July.....	78.6	121.2	115.5	144.5	114.2	149.4	140.1	169.8	164.3	125.8
August.....	80.2	120.7	117.6	146.0	113.9	149.4	140.0	169.8	167.4	127.0
September.....	85.9	118.2	117.6	141.9	112.0	144.7	142.3	169.5	162.0	126.5
October.....	88.4	116.1	115.9	137.6	110.8	143.7	144.0	173.7	157.7	125.4
November.....	85.8	114.3	114.7	130.5	109.2	141.6	147.5	174.2	155.7	124.3
December.....	78.3	112.5	110.9	108.7	106.4	139.3	150.2	174.5	153.2	120.2

¹ Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

7.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1957-62

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1949=100.

Industry	1957	1958	1959	1960	1961	1962
Forestry (chiefly logging).....	99.3	75.9	78.9	84.0	71.6	70.9
Mining.....	127.2	123.5	123.4	120.1	116.5	116.4
Metal mining.....	136.3	135.7	140.8	137.3	131.9	131.0
Gold.....	77.0	75.0	73.6	73.2	70.8	68.9
Other metal.....	191.7	192.4	203.5	197.0	188.8	188.8
Iron.....	221.6	221.5	236.8	268.9	254.5	278.6
Fuels.....	109.8	102.9	93.9	89.5	84.6	84.5
Coal.....	61.4	56.4	48.6	45.7	40.7	38.8
Oil and natural gas.....	287.0	282.8	278.8	277.8	273.5	272.7
Non-metal.....	138.7	129.6	131.9	132.2	139.7	144.1
Asbestos.....	..	..	166.1	173.8	179.9	183.5
Manufacturing.....	115.8	109.8	111.1	109.5	108.9	113.3
Durable goods.....	125.3	114.8	115.5	112.6	110.6	117.0
Non-durable goods.....	107.6	105.6	107.3	106.8	107.5	110.2
Foods and beverages.....	111.4	112.3	114.6	114.4	114.2	116.3
Meat products.....	124.7	130.0	139.3	136.0	134.4	135.3
Dairy products.....	114.3	121.9	125.4	124.2	124.7	123.9
Canned and cured fish.....	112.6	113.9	113.1	109.7	114.8	124.4
Canned and preserved fruits and vegetables.....	116.7	109.8	110.3	112.4	109.4	120.7
Grain mill products.....	103.6	104.3	103.8	102.9	101.1	98.5
Bread and other bakery products.....	109.2	109.4	109.9	111.2	110.4	111.5
Biscuits and crackers.....	93.6	92.2	91.2	90.7	92.6	94.9
Distilled and malt liquors.....	106.8	105.8	106.0	101.9	99.0	95.7
Other beverages.....	125.7	130.3	137.8	143.5	145.0	149.0
Confectionery.....	90.8	89.2	88.7	89.0	88.1	89.1
Tobacco and tobacco products.....	91.2	99.1	96.2	90.2	89.7	94.8
Rubber products.....	110.4	99.5	106.2	101.0	98.9	105.8
Leather products.....	88.6	86.0	88.2	83.8	87.6	89.2
Boots and shoes (except rubber).....	92.9	91.4	94.8	91.2	94.6	96.4
Other leather products.....	80.8	76.2	76.3	71.0	75.1	76.3
Textile products (except clothing).....	84.4	77.5	78.8	77.1	78.3	81.4
Cotton yarn and broad woven goods.....	83.7	75.6	72.4	68.2	72.0	74.2
Woollen goods.....	70.2	58.8	60.6	62.3	61.1	61.9
Synthetic textiles and silk.....	85.3	79.8	82.7	83.8	83.9	89.2
Clothing (textile and fur).....	94.2	90.7	92.4	89.9	90.5	92.7
Men's clothing.....	100.2	93.1	93.0	90.3	91.8	96.1
Women's clothing.....	94.6	95.8	97.2	96.4	99.1	99.7
Knit goods.....	81.0	76.3	78.4	73.1	72.0	73.8
Fur goods.....	69.6	67.8	70.0	66.2	64.8	62.0
Wood products.....	105.5	102.6	103.5	103.2	102.9	107.4
Saw and planing mills.....	105.0	103.5	103.6	104.4	105.2	109.3
Furniture.....	112.5	109.2	112.6	110.7	109.5	115.9
Other wood products.....	94.6	85.7	85.6	82.9	78.9	80.9
Paper products.....	123.5	121.1	123.2	124.0	123.7	125.9
Pulp and paper mills.....	124.4	120.9	124.2	125.3	124.7	125.9
Other paper products.....	121.1	121.4	121.0	120.8	121.4	125.8
Printing, publishing and allied industries.....	119.6	119.1	121.3	123.8	124.1	126.0
Iron and steel products.....	113.4	102.6	109.7	106.1	102.9	109.2
Agricultural implements.....	59.9	63.8	78.2	69.1	62.8	62.0
Boilers and plate work.....	126.9	115.8	117.4	114.5	110.5	119.7
Fabricated and structural steel.....	174.6	159.2	163.0	153.3	148.4	155.3
Hardware and tools.....	97.8	91.5	99.5	100.0	100.4	108.1
Heating and cooking appliances.....	101.5	99.1	106.1	96.7	95.9	104.3
Iron castings.....	105.3	95.6	99.8	91.8	90.1	94.6
Machinery manufactures.....	124.7	107.1	107.1	105.8	104.2	111.3
Industrial machinery.....	134.6	113.2	116.6	116.1	114.8	126.1
Primary iron and steel.....	124.2	103.8	119.8	120.3	116.6	124.0
Sheet metal products.....	109.8	102.1	110.3	107.8	104.6	114.8
Wire and wire products.....	117.6	111.2	118.3	116.3	109.9	111.3
Transportation equipment.....	142.1	123.8	112.3	106.8	105.0	111.1
Aircraft and parts.....	391.2	366.0	263.6	243.4	258.9	251.4
Motor vehicles.....	124.9	102.0	106.0	104.3	99.7	107.5
Motor vehicle parts and accessories.....	112.9	100.4	107.1	103.6	102.8	113.0
Railway and rolling-stock equipment.....	91.5	75.2	68.5	61.6	55.4	56.4
Shipbuilding and repairing.....	164.9	136.9	128.3	126.1	126.1	144.8
Non-ferrous metal products.....	128.3	122.3	126.3	129.2	124.3	124.8
Aluminium products.....	136.9	129.3	139.4	143.5	138.7	140.4
Brass and copper products.....	107.5	103.5	110.4	103.0	102.7	103.7
Smelting and refining.....	151.1	142.2	141.6	151.6	142.2	138.6

**7.—Annual Average Index Numbers of Employment, by Industrial Division and Group,
1957-62—concluded**

Industry	1957	1958	1959	1960	1961	1962
Manufacturing—concluded						
Electrical apparatus and supplies.....	150.4	135.7	135.8	133.1	132.9	148.1
Heavy electrical machinery.....	139.8	121.6	111.8	105.4	99.4	109.0
Telecommunication equipment.....	225.2	211.7	210.5	214.3	228.1	268.7
Non-metallic mineral products.....	132.2	133.2	143.1	140.0	138.2	146.7
Clay products.....	102.3	102.1	101.8	89.8	85.8	90.0
Glass and glass products.....	132.1	133.5	149.3	151.0	155.3	158.3
Concrete products.....	..	..	..	249.2	232.9	256.5
Products of petroleum and coal.....	140.0	139.7	138.5	137.5	137.0	139.3
Petroleum refining.....	..	141.8	140.7	140.3	139.9	141.8
Chemical products.....	133.5	131.2	129.4	132.3	131.4	132.6
Medicinal and pharmaceutical preparations..	117.1	119.0	119.2	118.0	119.2	122.6
Acids, alkalies and salts.....	146.9	148.1	145.5	155.3	154.9	152.4
Other chemical products.....	134.5	130.7	128.4	130.8	129.3	130.7
Miscellaneous manufacturing industries.....	113.7	119.9	126.5	130.3	137.8	145.2
Construction	135.7	126.2	130.3	125.7	121.7	124.3
Building and general engineering.....	144.4	127.6	129.0	121.9	117.7	121.8
Building.....	147.7	130.1	136.5	128.6	122.4	127.9
General engineering.....	130.8	117.1	98.0	94.0	97.9	97.3
Highways, bridges and streets.....	122.0	124.2	132.3	132.0	128.5	128.6
Transportation, Storage and Communication	120.4	115.5	114.3	111.1	108.6	108.4
Transportation.....	111.8	105.0	104.5	101.4	99.2	98.8
Air transport and airports.....	190.7	187.3	192.9	211.4	219.5	221.8
Steam railways.....	107.7	97.7	95.6	89.5	85.0	83.2
Maintenance of equipment.....	106.9	92.6	87.0	77.8	74.8	73.9
Maintenance of ways and structures.....	102.2	93.5	93.9	84.8	79.1	74.2
Transportation—steam railways.....	108.5	98.5	96.0	91.7	87.3	86.3
Telegraphs.....	126.8	122.3	121.9	117.9	114.1	115.6
Water transportation.....	100.1	96.9	94.6	92.7	90.2	90.5
Electric and motor transportation.....	123.5	124.1	129.3	132.3	135.6	137.9
Urban and interurban transportation.....	86.5	84.4	82.3	82.0	80.9	79.1
Truck transportation.....	189.1	191.5	211.6	216.9	220.8	222.1
Storage.....	115.8	115.3	114.4	108.6	106.3	102.4
Grain elevators.....	104.2	104.9	103.2	100.1	97.5	92.4
Storage and warehouses.....	150.5	145.9	147.0	133.4	132.3	131.9
Communication.....	187.4	171.0	166.5	163.8	160.1	162.0
Radio broadcasting.....	294.2	307.1	319.6	339.6	357.1	372.7
Telephone.....	155.7	154.2	148.3	143.6	138.5	139.5
Public Utility Operation	133.6	137.6	138.7	137.8	138.3	141.6
Electric light and power.....	133.9	136.2	135.5	134.9	136.1	138.2
Other public utilities.....	132.6	143.8	152.0	149.3	146.5	154.0
Trade	131.8	131.6	135.3	136.7	137.8	140.6
Wholesale.....	133.2	131.8	134.8	136.1	136.1	139.5
Retail.....	131.0	131.6	135.6	137.1	138.7	141.3
Food.....	164.9	171.9	178.8	189.1	194.7	197.4
Department stores.....	114.6	113.9	117.4	118.8	121.4	122.9
Variety stores.....	126.9	125.9	129.2	129.7	131.2	128.8
Automotive products.....	166.0	160.8	164.9	166.1	163.1	170.9
Finance, Insurance and Real Estate	145.0	149.3	153.2	156.7	163.1	170.1
Banking, investment and loan.....	148.4	150.1	153.6	157.5	164.1	171.6
Insurance.....	137.1	145.1	149.7	152.4	157.3	162.3
Service	131.9	135.1	139.3	143.2	148.9	156.5
Hotels and restaurants.....	125.5	125.6	128.6	130.1	129.9	135.0
Laundries and dry-cleaning plants.....	114.0	115.0	113.3	114.1	122.0	130.3
Business service.....	..	..	245.9	246.1	263.9	282.8
Industrial Composite	122.6	117.9	119.7	118.7	118.1	121.4

8.—Annual Average Index Numbers of Employment, by Province, Significant Years 1939-62, and Monthly Indexes 1962

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1949=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Averages—											
1939.....	..	64.1	66.8	59.6	64.6	57.3	59.7	71.4	55.1	55.8	60.1
1940.....	..	67.2	71.4	67.4	67.4	64.2	63.4	70.1	57.4	58.0	64.7
1945.....	..	81.9	101.5	98.6	92.8	86.7	85.3	86.4	76.3	87.5	88.8
1949.....	..	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	..	110.3	95.6	102.6	100.5	102.7	100.8	100.8	104.5	100.8	102.1
1953.....	140.4	115.5	101.0	100.8	112.4	114.5	107.0	116.2	128.5	108.2	113.1
1954.....	128.0	109.9	97.6	98.0	109.2	110.6	104.7	118.0	128.0	106.3	109.9
1955.....	131.1	114.2	97.1	103.5	112.5	113.5	105.2	117.0	133.0	111.9	112.9
1956.....	136.9	117.4	101.7	110.1	120.1	121.4	108.6	121.1	148.5	121.5	120.7
1957.....	130.1	115.2	100.2	103.8	121.5	124.3	110.9	125.3	152.2	123.9	122.6
1958.....	122.6	114.9	95.5	98.0	117.0	119.6	108.7	126.6	150.5	114.7	117.9
1959.....	125.8	126.3	96.3	101.7	118.5	121.3	112.2	130.0	155.0	115.1	119.7
1960.....	129.7	128.5	95.5	103.4	118.6	119.2	111.0	126.0	153.3	114.7	118.7
1961.....	131.7	130.7	94.0	103.9	118.3	118.7	110.0	123.1	154.2	112.3	118.1
1962.....	133.2	135.8	94.4	103.8	121.6	123.0	111.1	124.6	158.1	115.7	121.4
1962—											
January.....	122.7	109.3	89.0	101.9	115.7	117.7	105.1	112.4	148.8	106.9	115.2
February.....	116.8	106.2	88.6	99.8	115.2	117.1	104.8	112.1	147.6	108.1	114.7
March.....	113.3	112.0	87.8	97.0	114.6	118.0	105.8	113.5	148.9	110.4	115.2
April.....	115.5	114.6	91.0	92.4	116.3	119.9	106.9	117.2	149.0	111.6	116.7
May.....	127.5	141.6	97.1	103.0	120.5	123.4	110.6	127.0	157.4	115.7	121.3
June.....	145.6	150.9	98.4	110.8	124.8	125.7	114.4	132.3	164.7	119.1	125.0
July.....	150.5	158.1	97.6	109.0	125.9	125.2	116.1	135.3	168.2	123.6	125.8
August.....	148.1	161.1	99.0	110.3	127.2	126.6	117.8	135.8	169.4	123.5	127.0
September.....	150.6	158.8	98.5	107.9	126.6	126.8	116.7	133.1	167.4	121.8	126.5
October.....	147.3	154.3	96.6	107.6	126.4	126.2	115.3	130.6	161.9	118.3	125.4
November.....	138.3	145.4	96.2	104.6	125.4	126.3	111.9	125.7	158.4	116.5	124.3
December.....	122.6	117.6	93.4	101.9	120.2	123.0	108.0	120.8	156.0	113.2	120.2

9.—Annual Average Index Numbers of Employment, by Metropolitan Area, Significant Years 1939-62 and Monthly Indexes 1962

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1949=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver ¹
Averages—								
1939.....	60.9	67.5	56.3	57.0	53.1	47.1	59.2	49.7
1940.....	64.2	69.5	61.9	63.5	63.0	56.3	62.8	53.5
1945.....	90.4	109.3	89.2	82.8	87.6	84.1	85.9	96.1
1949.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	101.3	98.7	104.1	103.1	100.8	102.2	100.1	99.0
1953.....	113.7	110.8	119.8	109.2	111.1	110.9	103.9	102.1
1954.....	110.7	110.5	120.1	109.9	103.6	91.5	103.4	102.6
1955.....	113.4	108.0	121.6	114.0	106.4	103.4	104.6	107.9
1956.....	120.2	111.0	128.3	119.6	113.8	104.9	106.8	117.4
1957.....	124.6	110.8	132.1	120.3	114.4	95.9	107.7	120.4
1958.....	121.5	108.1	131.0	121.2	105.0	78.6	107.5	114.8
1959.....	123.3	110.4	131.3	124.9	112.0	79.3	111.3	116.0
1960.....	123.1	110.4	129.9	124.2	111.3	76.2	111.4	113.8
1961.....	123.3	113.3	131.8	127.9	108.1	72.8	110.3	111.3
1962.....	126.9	120.0	137.3	133.8	113.2	72.1	110.6	114.2
1962—								
January.....	122.5	111.0	132.1	127.8	107.8	71.0	105.8	107.1
February.....	122.8	112.4	131.8	126.2	103.3	64.0	105.4	107.9
March.....	124.0	113.9	133.2	127.7	109.1	64.0	106.4	110.1
April.....	125.5	116.9	134.7	130.1	111.3	73.1	107.8	111.6
May.....	127.3	119.2	137.0	135.0	114.2	74.4	110.5	114.2
June.....	129.3	122.9	138.4	138.7	116.3	74.1	113.2	116.2
July.....	128.1	122.7	138.6	138.7	116.0	70.2	113.3	119.1
August.....	129.4	125.2	139.7	139.9	114.5	75.0	115.0	119.7
September.....	129.6	125.2	140.2	136.1	115.2	74.7	114.8	118.3
October.....	129.8	125.5	141.4	136.2	114.5	74.7	113.8	115.6
November.....	129.1	125.2	142.3	136.1	116.5	75.4	111.4	115.9
December.....	125.2	120.1	138.8	133.2	114.5	73.9	109.6	114.3

¹ Includes New Westminster from 1956.

Average weekly wages and salaries have increased substantially in the years for which current payroll statistics have been collected, rising from \$23.44 in 1939 to \$80.55 in 1962. Approximately 15 p.c. of this advance was recorded during the abnormal conditions of the war years. Wartime gains resulted from substantial amounts of overtime work and a concentration of employment in war industries where earnings were relatively high; however, these gains were offset to a degree by wartime regulation of pay rates (as of prices) and dilution of labour through the employment of unskilled and part-time workers, including many inexperienced women. Following the relaxation of wage restrictions in December 1949 and the progressive lifting of price controls, the upward movement in per capita earnings gained momentum. The average annual increases from 1947 to 1962 were more than twice as great as those between 1939 and 1945. Variations over the years in the occupational and industry mix within the heterogeneous group of industries covered have had, on the whole, a buoyant effect on the per capita earning figures. More recently, year-to-year percentage changes have tended to level, those for 1961 and 1962 approximating 3 p.c.

10.—Annual Index Numbers of Employment and Payrolls, with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1960-62

Industry, Province and Urban Area	Employment (1949=100)			Payrolls (1949=100)			Average Weekly Wages and Salaries		
	1960	1961	1962	1960	1961	1962	1960	1961	1962
Industry							\$	\$	\$
Forestry (chiefly logging).....	84.0	71.6	70.9	157.5	137.8	143.9	74.85	77.05	81.42
Mining.....	120.1	116.5	116.4	218.8	216.9	223.1	93.80	95.90	98.82
Manufacturing.....	109.5	108.9	113.3	197.0	202.8	217.4	78.19	80.73	83.17
Durable goods ¹	112.6	110.6	117.0	202.5	206.0	225.0	84.20	87.08	89.80
Non-durable goods ¹	106.8	107.5	110.2	191.7	199.6	210.2	72.86	75.25	77.28
Construction.....	125.7	121.7	124.3	243.8	242.2	257.5	80.46	82.57	85.90
Transportation, storage and communication.....	111.1	108.6	108.4	190.1	194.2	200.8	82.32	85.87	88.98
Public utility operation.....	137.8	138.3	141.6	266.4	276.4	292.2	91.52	94.52	97.49
Trade.....	136.7	137.8	140.6	237.4	246.2	258.9	65.19	67.05	69.18
Finance, insurance and real estate.....	156.7	163.1	170.1	259.9	282.0	303.1	70.83	73.92	76.37
Service.....	143.2	148.9	156.5	253.3	274.2	297.7	53.08	55.38	57.23
Industrial Composite.....	118.7	118.1	121.5	210.9	216.5	229.8	75.83	78.11	80.58
Province									
Newfoundland.....	129.7	131.7	133.2	233.7	249.8	258.5	67.91	71.41	73.19
Prince Edward Island.....	128.5	130.7	135.8	216.3	231.5	246.6	55.00	57.03	58.10
Nova Scotia.....	95.5	94.0	94.4	160.0	161.4	166.7	62.65	63.98	65.73
New Brunswick.....	103.4	103.9	103.8	171.9	175.0	181.1	62.66	63.55	65.72
Quebec.....	118.6	118.3	121.6	211.6	218.1	232.3	73.00	75.33	77.94
Ontario.....	119.2	118.7	123.0	212.2	218.3	233.2	78.71	81.14	83.66
Manitoba.....	111.0	110.0	111.1	188.6	192.1	199.7	71.71	73.45	75.62
Saskatchewan.....	126.0	123.1	124.6	218.2	219.4	230.7	72.13	74.19	77.01
Alberta (including Northwest Territories).....	153.3	154.2	158.1	268.9	280.5	292.9	77.83	80.45	82.01
British Columbia (including Yukon Territory).....	114.7	112.3	115.7	209.3	211.0	223.2	82.97	85.20	87.44
Urban Area									
St. John's, Nfld.....	131.4	134.0	141.2	226.7	241.7	267.1	55.31	57.71	60.48
Sydney, N.S.....	88.2	78.6	76.5	142.7	128.0	129.8	75.62	75.70	78.81
Halifax, N.S.....	117.8	122.6	124.9	203.6	221.6	235.3	62.03	64.78	67.46
Moncton, N.B.....	99.1	104.7	107.6	162.1	175.1	183.8	59.31	60.56	61.96
Saint John, N.B.....	106.6	108.2	109.6	184.5	190.7	202.0	61.58	62.62	65.59
Chicoutimi-Jonquière, Que.....	115.8	108.8	107.7	214.8	211.5	215.1	92.28	96.72	99.23
Quebec, Que.....	110.4	113.3	120.0	200.0	213.3	233.8	63.77	66.47	68.94
Sherbrooke, Que.....	100.5	104.1	108.9	173.9	186.0	202.5	62.66	64.69	67.37
Shawinigan, Que.....	105.8	103.6	94.8	191.0	192.7	181.1	83.10	85.47	87.74
Trois Rivières, Que.....	112.0	110.5	115.1	191.8	196.9	209.5	70.10	72.77	74.35
Drummondville, Que.....	76.1	77.9	78.3	123.6	130.2	137.6	61.10	62.92	66.08
Montreal, Que.....	123.1	123.3	126.9	219.7	227.6	242.7	74.61	77.06	79.82
Ottawa, Ont.—Hull, Que.....	124.2	127.9	133.8	222.2	237.2	256.2	70.46	72.85	75.18
Kingston, Ont.....	112.2	117.9	116.8	209.0	227.9	232.4	73.99	76.62	78.69

¹ The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

10.—Annual Index Numbers of Employment and Payrolls, with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1960-62—concluded

Urban Area	Employment (1949=100)			Payrolls (1949=100)			Average Weekly Wages and Salaries		
	1960	1961	1962	1960	1961	1962	1960	1961	1962
Urban Area—concluded							\$	\$	\$
Peterborough, Ont.....	95.4	89.9	95.1	179.9	174.2	192.3	83.93	86.10	89.78
Oshawa, Ont.....	170.8	163.6	178.8	304.1	300.6	365.4	89.02	91.74	99.01
Toronto, Ont.....	129.9	131.8	137.3	231.8	243.2	261.4	78.98	81.59	84.10
Hamilton, Ont.....	111.3	108.1	113.2	201.5	202.5	219.1	84.00	86.84	89.68
St. Catharines, Ont.....	108.9	108.3	111.1	190.8	196.4	211.0	85.57	88.46	92.60
Niagara Falls, Ont.....	99.9	97.9	100.0	175.0	177.6	185.2	78.70	81.33	81.93
Brantford, Ont.....	81.2	81.6	83.5	132.6	137.6	143.9	71.39	73.80	75.46
Guelph, Ont.....	121.4	120.1	124.4	211.2	216.1	232.1	70.18	72.43	75.08
Calt, Ont.....	115.7	106.7	114.5	203.2	192.7	213.4	68.50	70.33	72.20
Kitchener, Ont.....	121.4	121.8	130.9	214.4	221.6	245.2	71.74	73.85	75.99
Sudbury, Ont.....	146.0	147.4	140.0	250.0	258.1	248.0	90.17	92.32	92.43
Timmins, Ont.....	93.7	91.3	89.0	137.0	138.2	139.2	68.84	71.15	73.40
London, Ont.....	123.9	129.5	135.9	220.9	238.8	258.0	72.07	74.38	76.46
Sarnia, Ont.....	124.7	126.5	128.9	254.4	266.7	279.8	98.05	101.28	104.28
Windsor, Ont.....	76.2	72.8	72.1	128.8	126.8	130.3	84.98	87.29	90.44
Sault Ste. Marie, Ont.....	143.5	139.2	145.4	270.0	275.1	293.3	95.28	99.65	101.50
Fort William-Port Arthur, Ont.....	108.0	107.2	105.6	189.2	192.9	192.7	78.07	80.13	81.31
Winnipeg, Man.....	111.4	110.3	110.6	193.4	197.1	203.1	68.64	70.42	72.25
Regina, Sask.....	131.3	135.2	139.9	238.4	254.4	273.5	69.68	72.80	75.90
Saskatoon, Sask.....	138.3	138.7	138.2	249.3	257.3	265.7	67.71	69.67	71.89
Edmonton, Alta.....	184.8	189.0	201.6	328.7	347.3	379.5	72.62	74.79	76.71
Calgary, Alta.....	170.7	172.3	178.6	298.7	313.9	339.9	73.61	76.58	80.77
Vancouver, B.C.....	113.8	111.3	114.2	212.0	214.0	225.0	87.42	83.82	85.80
Victoria, B.C.....	110.7	109.0	116.7	199.3	202.5	224.0	74.69	77.00	79.68

11.—Annual Average Weekly Wages and Salaries, by Industrial Division, Significant Years 1939-62, and Monthly Averages 1962

Year and Month	Forestry (chiefly log- ging)	Mining	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, Storage and Com- muni- cation	Public Utility Oper- ation	Trade	Finance, Insur- ance and Real Estate	Serv- ice ¹	Indus- trial Com- posite
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Averages—										
1939.....	17.37	28.69	22.79	18.83	28.68	29.53	21.83	29.59	16.33	23.44
1940.....	17.30	30.24	24.48	22.71	29.72	30.20	22.53	29.70	16.74	24.94
1945.....	26.90	38.61	32.46	30.66	36.05	36.91	26.85	34.77	20.71	32.04
1949.....	40.62	51.49	43.97	41.28	48.39	48.14	36.97	42.22	28.05	42.96
1950.....	42.44	54.27	46.49	43.42	49.34	51.44	39.02	44.09	29.64	45.08
1953.....	58.26	68.91	59.29	60.88	61.24	65.45	48.51	51.86	37.12	57.53
1954.....	59.89	70.67	61.15	61.15	62.76	67.87	50.73	53.93	38.91	59.04
1955.....	60.62	73.53	63.48	62.11	64.56	70.80	52.42	56.79	40.71	61.05
1956.....	65.40	78.01	66.71	68.58	67.29	74.39	54.64	60.29	42.93	64.44
1957.....	69.38	83.89	69.94	73.63	71.20	78.99	57.51	63.36	45.77	67.93
1958.....	71.74	86.60	72.67	74.54	74.72	83.85	60.20	66.40	48.23	70.43
1959.....	71.63	90.76	75.84	76.55	79.65	88.08	63.12	68.82	50.27	73.47
1960.....	74.85	93.80	78.19	80.46	82.32	91.52	65.19	70.83	53.08	75.83
1961.....	77.05	95.90	80.73	82.57	85.87	94.52	67.05	73.92	55.38	78.11
1962.....	81.42	98.82	83.17	85.90	88.98	97.49	69.18	76.37	57.23	80.55
1962—										
January.....	73.43	99.27	82.29	84.17	86.66	96.25	68.39	74.92	56.66	79.28
February.....	81.93	98.65	82.74	85.93	88.84	97.10	69.01	75.02	57.18	80.21
March.....	83.93	99.19	83.22	87.21	87.90	96.95	69.02	75.05	57.03	80.41
April.....	90.93	98.49	83.11	83.49	87.90	97.01	69.16	76.40	57.29	80.21
May.....	78.82	98.59	83.72	85.21	83.94	96.40	69.38	77.39	57.09	80.79
June.....	79.30	98.79	83.72	87.20	89.10	96.36	69.83	77.38	56.87	81.05
July.....	81.52	98.76	83.13	87.21	89.04	96.31	69.93	76.95	56.56	80.90
August.....	80.08	98.39	82.62	88.59	89.18	96.47	69.64	77.16	56.84	80.80
September.....	81.71	99.15	83.91	88.87	89.29	98.69	69.36	76.70	57.23	81.40
October.....	82.83	99.65	84.34	88.21	90.00	99.22	69.10	76.29	57.92	81.57
November.....	84.64	100.70	84.55	87.60	90.12	99.54	68.78	76.46	58.26	81.53
December.....	77.96	96.17	80.71	77.09	89.38	99.54	68.59	76.74	57.81	78.45

¹ Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

Subsection 2.—Hours and Earnings of Hourly Rated Wage-Earners

Toward the end of 1941, the monthly survey of employment and payrolls was extended to cover statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid. These wage-earners are mainly hourly rated production workers; information on hours is frequently not kept by employers for ancillary workers, nor in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly wage and salary statistics.

In the 18 years of the record, average hours have fallen in nearly all the industries and areas covered by the survey, reflecting widespread reductions in the standard work week and in the overtime work that was still prevalent in many industries in the final year of the War. The smallest decline in hours since 1945 (less than 1 p.c.) has taken place in building and structures: this group had been severely affected by wartime shortages of labour and materials and during the War generally curtailed operations. The 18-year decrease in hours of work in manufacturing approximated 8 p.c.

During this period, average hourly and weekly wages have risen substantially. Upward wage-rate revisions have been the main cause of these advances, but other factors have contributed. Important among these, especially in the earlier postwar years, were progressive increases in cost-of-living allowances, now largely absorbed in wage rates. Technological changes, frequently involving the employment of more highly skilled workers at the expense of lower paid jobs, have also tended to raise wage levels, as has the relatively greater expansion over the years in industries in which pay rates usually exceed the general level. From 1945 to 1962, average weekly wages rose 151 p.c. in manufacturing, 138 p.c. in mining and 191 p.c. in construction. Average hourly earnings increased 172 p.c. in manufacturing, 156 p.c. in mining and 178 p.c. in construction. In manufacturing the 1962 average hourly earnings stood at \$1.88, 2.7 p.c. above the 1961 average, while the average weekly wage at \$76.55 was 3.1 p.c. higher than in 1961. This difference in percentage changes was attributable mainly to a slight increase in average weekly hours in durable goods manufacturing in 1962.

12.—Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1945-62 and Monthly Averages 1962

Year	All Manufactures			Mining			Building and Structures		
	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages
	No.	\$	\$	No.	\$	\$	No.	\$	\$
Averages—									
1945.....	44.1	0.69	30.47	43.9	0.85	38.40	40.2	0.81	32.60
1949.....	42.2	0.99	41.74	42.7	1.18	50.22	40.0	1.08	43.28
1950.....	42.3	1.04	44.03	43.0	1.22	52.46	39.5	1.14	45.07
1953.....	41.3	1.36	56.25	42.6	1.54	65.69	40.7	1.53	64.31
1954.....	40.7	1.41	57.43	42.6	1.58	67.14	39.9	1.61	64.08
1955.....	41.0	1.45	59.45	43.2	1.61	69.68	39.5	1.63	64.46
1956.....	41.0	1.52	62.40	42.8	1.73	73.92	41.0	1.77	72.73
1957.....	40.4	1.61	64.96	42.3	1.88	79.35	41.3	1.90	78.47
1958.....	40.2	1.66	66.77	41.5	1.96	81.30	40.5	1.94	78.37
1959.....	40.7	1.72	70.16	41.5	2.04	84.80	39.6	2.01	79.59
1960.....	40.4	1.78	71.96	41.7	2.09	87.26	40.1	2.12	84.85
1961.....	40.6	1.83	74.27	41.8	2.13	89.08	39.9	2.17	86.39
1962.....	40.7	1.88	76.55	41.7	2.18	91.22	39.7	2.25	89.37

12.—Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1945-62 and Monthly Averages 1962—concluded

Year and Month	All Manufactures			Mining			Building and Structures		
	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages
	No.	\$	\$	No.	\$	\$	No.	\$	\$
1962—									
January.....	40.6	1.86	75.46	42.8	2.15	92.19	39.1	2.23	87.35
February.....	40.8	1.86	75.99	41.9	2.17	90.82	39.2	2.25	88.45
March.....	41.0	1.87	76.68	42.0	2.17	91.28	40.5	2.27	91.95
April.....	40.6	1.89	76.50	41.5	2.19	90.83	38.5	2.27	87.17
May.....	41.0	1.89	77.51	42.2	2.17	91.72	39.8	2.24	88.94
June.....	41.1	1.88	77.52	42.0	2.19	92.04	40.9	2.23	91.44
July.....	41.0	1.87	76.72	41.8	2.19	91.57	41.2	2.23	92.00
August.....	41.0	1.86	76.17	41.8	2.18	91.27	42.0	2.24	94.04
September....	41.4	1.88	77.61	41.6	2.19	91.34	42.1	2.25	94.67
October.....	41.3	1.89	77.96	42.3	2.18	92.18	41.4	2.25	93.23
November....	41.2	1.90	78.09	42.2	2.19	92.57	40.9	2.27	92.65
December....	37.3	1.94	72.34	38.8	2.24	85.85	30.7	2.30	70.60

13.—Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Urban Areas, 1960-62

Industry, Province and Urban Area	Average Weekly Hours Worked			Average Hourly Earnings			Average Weekly Wages		
	1960	1961	1962	1960	1961	1962	1960	1961	1962
	No.	No.	No.	\$	\$	\$	\$	\$	\$
Industry									
Mining	41.7	41.8	41.7	2.09	2.13	2.18	87.26	89.08	91.22
Metal mining.....	41.9	42.2	41.9	2.17	2.20	2.26	90.89	92.83	94.43
Coal mining.....	39.7	39.7	40.3	1.75	1.77	1.83	69.36	70.36	73.82
Manufacturing	40.4	40.6	40.7	1.78	1.83	1.88	71.96	74.27	76.55
Durable goods ¹	40.7	40.9	41.2	1.94	1.99	2.04	78.70	81.36	84.02
Non-durable goods ²	40.1	40.3	40.2	1.64	1.69	1.73	65.68	67.87	69.55
Construction	40.4	40.3	40.3	1.94	1.98	2.06	78.41	79.93	83.16
Buildings and structures.....	40.1	39.9	39.7	2.12	2.17	2.25	84.85	86.39	89.37
Highways, bridges and streets..	41.0	40.9	41.5	1.63	1.67	1.73	66.89	68.37	71.65
Service	39.1	38.7	38.1	1.04	1.07	1.10	40.58	41.27	42.02
Hotels and restaurants.....	39.1	38.7	38.0	1.01	1.04	1.06	39.63	40.09	40.41
Laundries and dry-cleaning plants	39.8	39.7	39.9	1.00	1.03	1.05	39.83	40.96	41.95
Province									
Newfoundland.....	40.3	40.1	39.8	1.64	1.71	1.69	65.94	68.39	67.77
Nova Scotia.....	40.8	40.4	40.4	1.57	1.60	1.64	64.13	64.48	66.20
New Brunswick.....	41.4	40.8	40.9	1.55	1.58	1.62	64.21	64.56	66.09
Quebec.....	41.2	41.5	41.5	1.60	1.65	1.70	66.10	68.25	70.39
Ontario.....	40.3	40.5	40.8	1.87	1.93	1.98	75.52	78.09	80.62
Manitoba.....	39.9	39.8	39.8	1.67	1.72	1.76	66.67	68.43	70.01
Saskatchewan.....	38.9	38.9	38.8	1.90	1.97	2.00	74.02	76.67	77.70
Alberta.....	39.5	39.7	39.8	1.89	1.96	1.99	74.76	77.90	79.29
British Columbia.....	37.6	37.7	37.7	2.17	2.23	2.28	81.69	84.17	86.04
Urban Area									
Montreal.....	40.3	40.7	40.7	1.65	1.70	1.75	66.78	69.04	71.35
Toronto.....	40.1	40.4	40.5	1.80	1.85	1.89	72.06	74.67	76.65
Hamilton.....	40.1	40.3	40.3	2.14	2.22	2.27	85.70	89.41	91.29
Windsor.....	39.7	40.0	41.2	2.14	2.21	2.29	84.83	88.38	94.14
Winnipeg.....	40.0	39.8	39.7	1.66	1.72	1.76	66.51	68.36	69.79
Vancouver.....	37.2	37.4	37.4	2.12	2.17	2.23	78.93	81.30	83.31

¹ The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and region or city and on standard weekly hours of labour are compiled by the federal Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics published are based on an annual survey covering some 27,500 establishments in most industries and apply to the last normal pay period preceding Oct. 1.

Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers in a given occupation are shown separately but are combined in the calculation of index numbers. Predominant ranges of rates for each occupation used are also given. Overtime pay is excluded.

The industry index numbers shown in Table 14 measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. More detailed information on concepts and methods of developing these statistics is given in the annual report.

14.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1953-62 (1949=100)

NOTE.—Indexes back to 1901 may be obtained from the Department of Labour publication *Wage Rates, Salaries and Hours of Labour 1962*.

Year	Log- ging	Coal Mining	Metal Mining	Manufacturing			Con- struc- tion	Rail- ways	Tele- phone	Per- sonal Service	General Average
				Dur- able Goods	Non- durable Goods	All Manu- factur- ing					
1953.....	135.5	124.0	132.3	136.3	132.8	134.6	136.2	137.2	136.6	123.3	133.6
1954.....	138.0	123.5	136.7	140.0	136.9	138.5	140.0	137.8	147.6	128.6	137.9
1955.....	138.2	122.8	140.3	143.7	140.7	142.2	145.4	187.8	152.8	132.3	141.7
1956.....	160.8	123.6	150.8	151.2	148.3	149.8	150.7	146.8	157.6	136.1	148.7
1957.....	168.4	137.4	156.2	160.7	156.3	158.6	160.7	153.3	165.9	138.9	156.5
1958.....	172.0	147.6	160.8	166.1	162.2	164.2	171.0	153.3	175.4	143.5	162.5 ^r
1959.....	176.2	147.3	164.3	170.8	167.0	168.9	180.7	165.7	175.3 ^r	146.1	168.8 ^r
1960.....	184.3	148.2	169.4	176.6	173.2	175.0	192.6	166.4	178.0	156.8	175.5 ^r
1961.....	190.8	154.5	173.9	180.3	178.7	179.5	196.3	176.5	188.0	158.8	180.0
1962.....	199.4	161.1	177.2	184.7	184.3	184.5	206.2	180.5	194.4	162.2	185.9

15.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct 1, 1962

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sher- brooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Construction (building and structures only)—						
Bricklayer and mason.....	2.42	2.10	2.25	2.75	3.35	2.95
Carpenter.....	2.15	2.04	2.05	2.55	3.10	2.98
Electrician.....	2.35	2.00	2.00	2.70	3.68	3.60
Painter.....	1.89	1.77	1.95	2.45	2.81	2.60
Plasterer.....	2.40	2.10	2.25	2.75	3.25	3.05
Plumber.....	2.42	2.00	2.20	2.82	3.56	3.30
Sheet metal worker.....	2.15	1.65	2.20	2.55	3.60	3.05
Labourer.....	1.58	1.15	1.65	1.95	2.15	2.00
Truck driver.....	1.58	1.20	1.65	1.95	2.15	2.00

**15.—Average Wage and Salary Rates for Selected Occupations in Certain Cities
Across Canada, Oct 1, 1962—continued**

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sher- brooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Manufacturing and Other Industries—¹						
General labourer, male.....	1.50	1.43	1.26	1.57	1.71	1.88
Maintenance Trades—						
Carpenter.....	2.03	1.87	1.69	2.16	2.27	2.46
Electrician.....	2.15	2.02	1.79	2.30	2.47	2.67
Machinist.....	2.14	1.95	1.79	2.27	2.38	2.78
Mechanic.....	1.92	1.86	1.78	2.19	2.31	2.58
Millwright.....	2.39	2.02	1.60	2.29	2.34	2.42
Pipefitter.....	2.39	1.99	1.64	2.43	2.37	2.55
Tool and die maker.....	2.26	1.93	1.87	2.39	2.47	2.54
Welder.....	2.16	1.95	1.72	2.21	2.21	2.59
Service Occupations—						
Truck driver, heavy truck.....	1.41	1.32	1.53	1.78	1.93	1.90
Truck driver, light truck.....	1.45	1.51	1.40	1.68	1.88	1.89
Office Occupations, Male—	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
Bookkeeper, senior.....	84.62	87.30	84.92	98.05	102.75	101.64
Clerk, intermediate.....	63.43	64.48	65.55	72.49	73.46	83.67
Clerk, senior.....	86.28	91.06	90.81	96.66	96.08	105.46
Order clerk.....	68.66	68.13	65.65	79.95	82.44	90.40
Draughtsman, intermediate.....	79.11	87.85	80.56	97.26	93.63	95.32
Draughtsman, senior.....	98.32	114.34	120.49	118.58	112.33	113.32
Office Occupations, Female—						
Clerk, intermediate.....	47.24	51.18	49.22	59.25	61.23	58.91
Machine Operator—						
Bookkeeping.....	46.94	45.76	44.85	54.67	57.07	53.02
Calculating.....	52.18	45.26	42.84	58.96	60.30	59.18
Payroll clerk.....	52.99	53.52	48.31	62.92	66.19	60.13
Secretary, senior.....	65.58	64.14	60.56	81.36	80.39	77.91
Stenographer, junior.....	46.52	46.43	45.42	56.18	58.13	56.50
Stenographer, senior.....	57.87	58.97	60.74	67.88	66.71	67.61
Switchboard operator.....	49.35	43.92	44.50	56.39	59.40	57.29
Typist, junior.....	44.77	41.17	38.76	47.50	51.02	50.29
Typist, senior.....	49.69	52.52	50.28	58.03	60.42	59.47

¹For footnote, see end of table.

**15.—Average Wage and Salary Rates for Selected Occupations in Certain Cities
Across Canada, Oct 1, 1962—concluded**

Industry and Occupation	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Construction (building and structures only)—						
Bricklayer and mason.....	2.80	2.62	2.62	2.95	2.90	3.09
Carpenter.....	2.60	2.31	2.31	2.70	2.70	3.02
Electrician.....	2.80	2.56	2.51	2.95	3.00	3.43
Painter.....	2.25	2.05	2.17	2.30	2.20	2.91
Plasterer.....	2.80	2.45	2.50	2.80	2.80	3.00
Plumber.....	2.90	2.65	2.65	2.75	2.80	3.24
Sheet metal worker.....	2.50	2.40	2.40	2.75	2.95	3.11
Labourer.....	1.65	1.56	1.63	1.95	1.95	2.19
Truck driver.....	1.75	1.60	1.64	1.95	1.95	2.41
Manufacturing and Other Industries—¹						
General labourer, male.....	1.68	1.62	1.61	1.78	1.58	1.97
Maintenance Trades—						
Carpenter.....	2.24	2.14	2.17	2.38	2.25	2.52
Electrician.....	2.36	2.55	2.46	2.61	2.52	2.65
Machinist.....	2.24	2.38	2.45	2.32	2.42	2.58
Mechanic.....	2.19	2.28	2.20	2.44	2.28	2.56
Millwright.....	2.17	—	2.14	2.30	2.37	2.57
Pipefitter.....	2.21	2.66	2.40	2.46	2.55	2.42
Tool and die maker.....	2.16	—	—	—	—	2.64
Welder.....	2.23	2.43	2.39	2.47	2.35	2.58
Service Occupations—						
Truck driver, heavy truck.....	1.71	1.76	1.67	1.94	1.82	2.29
Truck driver, light truck.....	1.52	1.64	1.58	1.80	1.70	2.22
Office Occupations, Male—	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
Bookkeeper, senior.....	85.68	93.53	86.59	103.66	100.98	102.01
Clerk, intermediate.....	65.21	67.65	67.38	78.76	74.36	76.81
Clerk, senior.....	84.67	93.15	88.93	104.86	96.83	101.67
Order clerk.....	67.38	68.85	67.63	76.11	73.30	85.07
Draughtsman, intermediate.....	86.42	81.26	78.67	90.52	83.67	97.04
Draughtsman, senior.....	100.99	97.32	94.23	108.57	104.86	115.17
Office Occupations, Female—						
Clerk, intermediate.....	51.76	59.70	58.11	56.85	56.93	64.73
Machine Operator—						
Bookkeeping.....	50.82	53.93	52.01	52.00	50.24	54.05
Calculating.....	54.00	57.82	52.28	56.78	54.77	62.75
Payroll clerk.....	56.90	65.46	62.14	67.67	60.09	66.48
Secretary, senior.....	73.19	76.34	70.27	80.02	71.92	76.63
Stenographer, junior.....	49.78	56.52	51.61	56.33	53.21	54.13
Stenographer, senior.....	60.95	63.53	63.28	66.46	63.53	64.36
Switchboard operator.....	49.32	52.99	52.40	54.63	51.97	55.98
Typist, junior.....	44.31	47.38	47.56	48.26	47.84	47.99
Typist, senior.....	52.45	61.24	55.44	58.09	55.84	59.02

¹ "Other Industries" consists of logging; mining; transportation (all sectors including air transportation); storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

Table 16 gives summary data on working conditions of plant and office employees in manufacturing industries for the years 1958 to 1962. The percentages in this table denote the proportions which employees—plant or office—of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items.

It will be noted that for the year 1958 the number of establishments shown as having plant employees is identical with the number having office employees, while for 1959 and subsequent years these numbers differ. The explanation is that in 1959 and subsequent years separate counts of establishments having plant workers and establishments having office employees were made, while in previous years counts of establishments were obtained without distinguishing between those with both plant and office employees and those with either one or the other only.

Further details and additional information may be seen in the annual report *Working Conditions in Canadian Industry*, compiled and published by the Department of Labour and based on a survey at May 1 each year of some 30,000 establishments.

16.—Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1958-62

Item	1958	1959	1960	1961	1962
COVERAGE					
Plant Employees— Reporting establishments..... No.	6,240	7,902	8,028	8,320	8,618
Employees..... " "	758,943	819,401	809,736	778,475	822,623
Office Employees— Reporting establishments..... No.	6,240	7,658	7,732	8,012	8,338
Employees..... " "	226,973	229,233	234,618	242,360	252,546
PERCENTAGES OF PLANT EMPLOYEES					
Standard Weekly Hours—	70	70	70	72	73
40 and under.....	9	9	10	8	8
Over 40 and under 44.....	4	5	4	4	4
44.....	8	8	8	8	7
45.....	2	1	1	1	1
Over 45 and under 48.....	4	4	4	4	4
48.....	3	3	3	3	3
Over 48.....					
Employees on a five-day week.....	88	89	90	90	90
Vacation with Pay—					
Two weeks with pay.....	95	94	86 ¹	88 ¹	88 ¹
After: 1 year or less.....	23	23	20	23	24
2 years.....	14	14	14	13	12
3 years.....	28	28	26	26	26
4-5 years.....	28	26	25	25	25
Other periods.....	2	3	1	1	1
Three weeks with pay.....	73	71	72	72	73
After: Less than 10 years.....	4	5	6	7	7
10 years.....	8	8	11	19	21
11-14 years.....	4	4	4	6	7
15 years.....	60	47	45	36	34
20 years.....	4	3	2	2	3
Other periods.....	3	4	4	3	1

For footnote, see end of table.

**16.—Summary of Selected Working Conditions of Plant and Office Employees
in Manufacturing Industries, 1958-62—concluded**

Item	1958	1959	1960	1961	1962
PERCENTAGES OF PLANT EMPLOYEES—concluded					
Vacation with Pay—concluded					
Four weeks with pay.....	16	26	31	33	36
After: 25 years.....	12	22	25	27	25
Other periods.....	4	4	6	6	11
Vacations that do not vary with length of service.....	1	1	12 ¹	11 ¹	11 ¹
1 week.....	..	..	5	5	5
2 weeks.....	..	..	7	6	5
Paid Statutory Holidays.....	97	95	96	96	95
1-5.....	10	10	10	9	8
6.....	6	7	5	6	5
7.....	11	9	8	8	8
8.....	52	52	53	53	52
9.....	15	14	15	16	18
More than 9.....	3	3	3	3	3
PERCENTAGES OF OFFICE EMPLOYEES					
Standard Weekly Hours—					
Under 37½.....	26	27	27	27	29
37½.....	41	42	43	43	42
Over 37½ and under 40.....	10	9	8	8	7
40.....	19	18	18	18	19
Over 40.....	4	4	4	4	3
Employees on a five-day week.....	93	95	95	96	97
Vacation with Pay—					
Two weeks with pay.....	99	98	90 ¹	91 ¹	92 ¹
After: 1 year or less.....	89	89	79	82	85
2 years.....	6	6	7	7	5
3 years.....	1	2	1	1	1
5 years.....	2	1	2	1	1
Other periods.....	1	..	1	..	..
Three weeks with pay.....	82	82	83	83	84
After: Less than 10 years.....	5	6	7	7	8
10 years.....	16	17	22	22	33
11-14 years.....	4	6	4	7	9
15 years.....	52	49	46	53	51
20 years.....	3	2	2	2	2
Other periods.....	2	2	2	1	1
Four weeks with pay.....	20	32	37	41	47
After: 25 years.....	14	25	23	31	31
Other periods.....	6	7	9	10	16
Vacations that do not vary with length of service.....	1	1	10 ¹	7 ¹	7 ¹
1 week.....	..	..	1	1	1
2 weeks.....	..	..	9	6	6
Paid Statutory Holidays.....	98	99	99	99	99
1-6.....	4	5	4	5	4
7.....	9	8	7	6	7
8.....	58	58	60	58	58
9.....	22	23	22	23	24
More than 9.....	5	5	5	6	5

¹ Distinction between vacation policies providing for increasing vacation periods with increasing service and vacation policies providing for vacations of one stated period regardless of length of service was made for the first time in 1960; thus, in comparing 1960, 1961 and 1962 figures with those for previous years, the percentages of employees granted vacations under both policies should be added.

Wages of Farm Labour.—The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland. The rates presented in Table 17 are average wages paid to all farm help regardless of age and skill. Because the rates reported may cover a wide range of skills, of types of work and of ages of hired workers, the value of the resulting data is considered to be an indicator of trends rather than a measure of absolute wage levels. No attempt has been made to have the wage rates reflect such perquisites as separate housing accommodation, fuel, electricity and food which, under some conditions of hiring, are supplied by employers to their hired farm help.

17.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1960-62

NOTE.—Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Province and Year	January 15				May 15				August 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Maritime Provinces—												
1960.....	5.00	6.00	101.00	134.00	5.00	6.40	105.00	134.00	5.10	6.20	102.00	138.00
1961.....	4.90	6.20	106.00	134.00	5.10	6.50	107.00	144.00	5.20	6.30	107.00	138.00
1962.....	5.00	6.30	106.00	134.00	5.10	6.50	108.00	143.00	5.10	6.30	108.00	141.00
Quebec—												
1960.....	5.70	7.10	107.00	148.00	5.80	7.10	111.00	149.00	6.00	7.40	120.00	160.00
1961.....	5.80	7.00	110.00	154.00	6.00	7.30	110.00	149.00	6.30	7.60	123.00	161.00
1962.....	5.90	7.10	114.00	155.00	6.00	7.30	113.00	154.00	6.40	7.70	124.00	165.00
Ontario—												
1960.....	5.90	7.60	110.00	155.00	6.30	8.10	117.00	156.00	6.20	8.40	116.00	162.00
1961.....	6.10	7.80	111.00	156.00	6.40	8.10	119.00	162.00	6.80	8.70	120.00	164.00
1962.....	6.40	8.10	117.00	161.00	6.70	8.30	120.00	165.00	6.70	8.50	122.00	162.00
Manitoba—												
1960.....	5.30	6.90	93.00	132.00	6.20	8.00	133.00	160.00	7.00	8.40	136.00	167.00
1961.....	5.70	7.30	103.00	141.00	6.40	8.10	135.00	165.00	6.90	8.50	137.00	167.00
1962.....	5.70	7.40	104.00	142.00	6.50	8.20	136.00	166.00	6.90	8.60	140.00	170.00
Saskatchewan—												
1960.....	5.70	7.40	98.00	138.00	6.70	8.60	143.00	181.00	7.30	9.20	147.00	184.00
1961.....	5.80	7.40	102.00	140.00	6.90	8.80	145.00	185.00	7.20	9.00	148.00	185.00
1962.....	6.00	7.50	107.00	144.00	7.00	9.10	147.00	184.00	7.30	9.50	152.00	184.00
Alberta—												
1960.....	6.30	8.00	119.00	167.00	6.90	8.80	142.00	180.00	7.10	8.80	144.00	180.00
1961.....	6.00	7.70	118.00	162.00	7.00	8.90	143.00	183.00	7.30	9.00	147.00	182.00
1962.....	6.10	8.10	123.00	169.00	7.10	8.80	145.00	186.00	7.40	9.30	152.00	189.00
British Columbia—												
1960.....	7.30	9.10	132.00	201.00	7.40	9.50	139.00	196.00	7.70	9.60	146.00	205.00
1961.....	7.30	9.30	139.00	200.00	7.80	9.90	144.00	201.00	7.90	9.70	147.00	209.00
1962.....	7.70	9.40	144.00	210.00	7.80	9.90	147.00	208.00	8.00	10.10	151.00	218.00
Totals—												
1960.....	5.50	7.00	111.00	155.00	5.90	7.50	128.00	165.00	6.20	7.80	129.00	169.00
1961.....	5.70	7.20	112.00	155.00	6.10	7.70	131.00	172.00	6.40	7.90	131.00	171.00
1962.....	5.80	7.30	117.00	159.00	6.20	7.70	132.00	174.00	6.40	8.00	137.00	176.00

Section 5.—Unemployment Insurance*

During the depression of the 1930's the need for a nation-wide scheme of unemployment insurance became recognized. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, by consent of the provinces, an amendment to the British North America Act was obtained empowering the Federal Parliament to legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance scheme and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations carried on under the Act. The Act, which came into effect on July 1, 1941, was later amended on several occasions and was replaced by a new Unemployment Insurance Act passed on July 1, 1955 and effective Oct. 2, 1955.

Legislation provides for compulsory coverage of some four fifths of all non-agricultural employees under an insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the payment of benefits to unemployed insured persons. The Act is administered by a Commission of three persons appointed by the Governor in Council, of whom one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service, except the following: employment in specified industries or occupations such as agriculture, horticulture and forestry (effective Jan. 1, 1956, coverage was also extended to certain employments in these three industries); the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; private domestic service; private-duty nursing; teaching; certain director officers of corporations; workers on other than an hourly, daily or piece rate earning more than \$5,460 a year effective Sept. 27, 1959, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a mileage rate) are insured regardless of amount of earnings, together with all employees who receive \$5,460 or less at weekly, monthly, yearly or commission rates.

Under the Canadian Unemployment Insurance Act, benefit payments are made out of a Fund derived from moneys provided by Parliament and from contributions by insured employed persons and their employers. The amount of the employee contribution is determined by his weekly earnings and, since 1950, an equal contribution is required from the employer. Federal Government participation amounts to one fifth of the aggregate employer-employee contribution. In addition, administrative costs are assumed by the Federal Government. Contributions became payable on July 1, 1941 and by Mar. 31, 1962 a total of \$3,501,000,000 had been provided from these three sources; accruals from investment over the period brought the net revenue to \$3,772,000,000. Investment transactions, as authorized by an Investment Committee, are carried out by the Bank of Canada.

Benefits became payable on Jan. 27, 1942 and by Mar. 31, 1962 a total of \$3,706,000,000 had been paid, the balance in the fund at that date being \$66,600,000.

* Prepared by the Unemployment Insurance Section, Labour Division, Dominion Bureau of Statistics; statistics of unemployment insurance are compiled and published by the DBS from material supplied by the Unemployment Insurance Commission.

Statistics on the Operation of the Act.—In order to assess the impact of changing economic conditions on the insurance program, provision is made for collection of current operational data, such as claims filed and processed and payments made. This information is published monthly in the *Statistical Report on the Operation of the Unemployment Insurance Act* (Catalogue No. 73-001). Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program.

Persons wishing to draw benefit must file either an initial or a renewal claim. Where it is necessary to compute entitlement to benefit, an initial claim is taken, otherwise a renewal. In the main, initial and renewal claims combined are an approximation of recorded separations from employment during a month. However, if a claimant exhausts his benefit and wishes to be reconsidered for further benefit, an initial claim is required. Such claims, accounting for 15 p.c. of the monthly volume in 1962, are not new cases of disemployment. The count of claimants at the month-end indicates the extent to which claimants maintain contact with local offices of the Commission.

18.—Claims Filed, Claimants and Amount Paid, by Month, 1961 and 1962

Month	1961			1962		
	Initial and Renewal Claims Filed	Claimants at End of Month	Amount Paid	Initial and Renewal Claims Filed	Claimants at End of Month	Amount Paid
	'000	'000	\$'000	'000	'000	\$'000
January.....	344	847	67,660	320	699	57,799
February.....	235	873	70,989	206	719	57,988
March.....	259	838	85,188	226	687	68,827
April.....	210	713	64,540	181	564	51,647
May.....	162	341	58,704	138	264	45,409
June.....	113	267	25,890	93	214	18,709
July.....	126	255	18,551	112	212	14,511
August.....	121	229	18,866	99	199	15,878
September.....	122	229	16,082	98	198	12,664
October.....	158	269	17,115	150	244	15,754
November.....	253	386	20,938	244	374	18,934
December.....	358	601	29,447	324	592	31,087
Totals.....	2,460	487¹	493,971	2,192	414	409,208

¹ Average of month-end data.

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are compiled regarding persons employed in insurable employment and benefit periods established and terminated. These data are published in the annual report *Benefit Periods Established and Terminated under the Unemployment Insurance Act* (Catalogue No. 73-201). The data on the insured population in Table 19 were obtained from returns from the renewal of insurance books and contribution cards at June 1, 1960 and June 1, 1961. Included are persons contributing in insurable employment on those dates and persons on claim.

19.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1960 and 1961

NOTE.—Based on a 10-p.c. sample of contributors and claimants at June 1.

Industry	1960		1961	
	Males	Females	Males	Females
	No.	No.	No.	No.
Agriculture	8,320	1,530	7,860	1,710
Forestry	58,240	1,690	48,580	1,190
Fishing and Trapping	7,430	130	17,140	420
Mines, Quarries, Oil Wells	98,890	3,730	97,110	3,520
Metal mines.....	61,440	1,210	57,620	1,220
Mineral fuels.....	21,130	1,460	16,590	790
Non-metal mines except coal.....	10,080	230	10,470	230
Quarries, sand pits.....	3,840	70	3,900	120
Services to mining.....	2,400	760	8,530	1,160
Manufacturing	982,200	304,250	945,650	309,920
Foods and beverages.....	129,080	44,810	144,540	48,230
Tobacco products.....	4,140	4,890	3,980	4,580
Rubber.....	17,320	4,830	14,960	4,770
Leather.....	16,610	13,920	16,420	15,340
Textile.....	39,270	22,810	39,680	21,490
Clothing and knitting mills.....	30,870	73,600	29,570	76,380
Clothing.....	..	..	29,780	61,850
Knitting mills.....	..	..	6,790	14,530
Wood, furniture.....	98,970	9,820	91,480	9,870
Wood.....	..	..	68,970	5,310
Furniture, fixtures.....	..	..	24,510	4,560
Paper and allied.....	76,640	13,520	82,170	13,990
Printing, publishing, allied.....	45,800	20,800	44,590	20,610
Iron and steel, non-ferrous metal.....	228,980	28,240	201,170	21,950
Primary metal.....	..	..	89,940	5,640
Metal fabricating.....	..	..	76,390	10,840
Machinery.....	..	..	40,840	5,470
Transportation equipment.....	133,710	10,930	110,560	10,150
Electrical products.....	52,840	23,160	53,550	24,140
Non-metallic mineral products.....	33,150	4,110	32,940	4,500
Petroleum and coal products.....	10,230	940	10,920	1,760
Chemical and chemical products.....	43,080	15,170	42,980	15,810
Miscellaneous manufacturing.....	21,510	12,800	26,140	16,350
Construction	265,960	9,560	243,080	8,680
General contractors.....	163,950	5,360	137,200	4,510
Special trade contractors.....	102,010	4,200	105,880	4,170
Transportation, Communication and Other Utilities	351,080	67,490	353,310	66,170
Transportation.....	269,350	20,740	258,380	18,560
Storage.....	15,530	1,770	11,400	1,640
Communication.....	26,790	37,380	38,720	38,190
Electric power, gas and water.....	39,410	7,600	44,830	7,780
Trade	441,370	262,450	430,890	258,050
Wholesale.....	152,550	48,680	162,940	49,600
Retail.....	288,820	213,770	267,950	208,450
Finance, Insurance, Real Estate	59,030	102,730	61,820	105,150
Community, Business and Personal Service	176,720	202,680	185,160	203,580
Community service.....	26,980	34,910	21,630	34,700
Education and related service.....	..	..	16,270	8,740
Health and welfare.....	..	..	4,380	25,490
Religious organizations.....	..	..	980	470
Motion picture and recreational.....	15,650	7,290	16,590	7,600
Services to business management.....	40,690	40,010	28,370	34,420
Personal service.....	93,400	120,470	89,300	115,850
Miscellaneous services.....	..	..	29,270	11,010
Public Administration and Defence	134,350	35,150	114,930	30,190
Unspecified Employment	13,080	3,360	7,700	4,010
Claimants	379,470	138,590	377,100	138,440
Totals, All Industries	2,976,140	1,133,440	2,890,330	1,131,030

The following statement shows the current weekly rates of contribution and benefit that became effective Sept. 27, 1959. The weekly contribution is based on actual earnings in the week irrespective of the number of days in which the earnings are obtained; the employer pays a like amount. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. A claimant must have, to qualify for regular benefit, at least 30 weekly contributions in the last 104 weeks prior to claim; eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period; and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, EFFECTIVE SEPT. 27, 1959

NOTE.—Weekly rates in effect from Oct. 2, 1955 to Sept. 26, 1959 are given in the 1962 Year Book, p. 738.

Range of Weekly Earnings	Weekly Contribution	Range of Average Weekly Contributions	Weekly Rates of Benefit		Earnings not Deducted	
			Person Without Dependant	Person With Dependant	Person Without Dependant	Person With Dependant
	cts.	cts.	\$	\$	\$	\$
Under \$9.....	10 ¹	Under 25.....	6	8	3	4
\$ 9 and under \$15.....	20	25 and under 34.....	9	12	5	6
15 " " 21.....	30	34 " " 42.....	11	15	6	8
21 " " 27.....	38	42 " " 50.....	13	18	7	9
27 " " 33.....	46	50 " " 57.....	15	21	8	11
33 " " 39.....	54	57 " " 63.....	17	24	9	12
39 " " 45.....	60	63 " " 69.....	19	26	10	13
45 " " 51.....	66	69 " " 75.....	21	28	11	14
51 " " 57.....	72	75 " " 82.....	23	30	12	15
57 " " 63.....	78	82 " " 90.....	25	33	13	17
63 " " 69.....	86	90 or over.....	27	36	14	18
69 or over.....	94					

¹ A half stamp, except for fishermen.

The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks. Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.

Table 20 distributes by province persons establishing regular benefit periods, regular benefit periods terminated, average weeks paid and average dollar benefit paid on these terminations. A claimant establishes a *regular benefit period* when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit authorized, the weekly rate authorized and total entitlement are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates either when he has exhausted the amount authorized or when 12 months have elapsed since he established, whichever comes first.

20.—Persons Establishing Regular Benefit Periods, Benefit Periods Terminated, and Duration and Amount of Benefit Paid, by Province, 1960 and 1961

NOTE.—Based on a 20-p.c. sample.

Province	1960				1961			
	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	No.	\$	No.	No.	No.	\$
Newfoundland.....	25,060	29,465	14.64	348.46	24,160	25,125	15.59	401.26
Prince Edward Island.....	4,330	5,460	15.98	326.95	4,315	4,360	15.45	326.03
Nova Scotia.....	44,655	50,275	14.13	305.81	45,005	45,380	15.08	358.58
New Brunswick.....	39,555	45,210	14.36	313.57	35,840	40,165	15.19	354.52
Quebec.....	328,525	377,670	14.40	323.64	291,765	328,900	14.49	352.13
Ontario.....	379,535	420,595	13.63	310.95	339,190	376,855	13.78	342.24
Manitoba.....	43,365	43,525	13.86	302.02	42,725	46,385	14.73	359.13
Saskatchewan.....	29,680	31,040	14.24	316.02	29,565	30,015	14.79	358.66
Alberta.....	58,805	58,800	12.65	288.31	51,390	58,630	13.53	339.49
British Columbia.....	112,240	128,280	13.69	320.26	103,725	110,540	14.56	381.33
Totals.....	1,065,750	1,190,320	13.94	315.55	967,680	1,066,355	14.29	352.87

Table 21 gives regular benefit periods terminated and average weeks paid, classified by the age of the claimant and by his occupation.

21.—Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1960 and 1961

NOTE.—Based on a 20-p.c. sample.

Age Group and Occupation	1960		1961	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
Age Group	No.	No.	No.	No.
Under 20 years.....	46,935	13.00	42,230	12.82
20 — 24 ".....	205,130	13.40	184,575	13.83
25 — 34 ".....	342,995	12.99	308,445	13.40
35 — 44 ".....	247,880	13.16	224,245	13.48
45 — 54 ".....	181,425	13.84	162,235	14.18
55 — 64 ".....	107,620	15.57	95,540	15.92
65 or over.....	51,015	24.04	42,900	25.21
Unspecified.....	7,320	14.20	6,185	14.43
Totals.....	1,190,320	13.94	1,066,355	14.29
Occupation				
Managerial.....	8,605	17.36	8,215	16.90
Professional.....	11,510	13.04	9,240	14.23
Clerical.....	112,805	17.20	102,270	17.60
Transportation.....	112,040	13.23	100,475	14.23
Communications.....	9,845	19.41	8,255	20.09
Commercial.....	65,340	15.61	59,055	16.04
Financial.....	1,215	12.98	965	15.25
Service.....	97,575	16.83	86,860	16.98
Personal.....	49,150	16.60	44,725	16.59
Domestic.....	38,400	16.80	29,495	15.99
Protective.....	12,675	20.90	10,890	21.63
Other.....	2,890	14.38	1,750	14.54

21.—Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1960 and 1961—concluded

Occupation	1960		1961	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
Occupation—concluded	No.	No.	No.	No.
Agricultural.....	8,675	14.42	8,565	14.77
Fishing, trapping and logging.....	52,550	12.69	50,975	13.54
Fishing and trapping.....	1,865	14.00	1,670	14.04
Logging.....	50,685	12.64	49,405	13.52
Mining.....	24,170	11.35	21,395	13.48
Manufacturing and mechanical.....	239,460	12.32	217,650	12.17
Electric light and power.....	16,485	13.85	15,210	14.16
Construction.....	161,795	12.75	136,090	13.18
Labourers.....	250,165	13.75	224,175	14.02
Unspecified.....	18,085	14.22	16,960	13.80

Seasonal benefit is payable in the period Dec. 1 to mid-May to certain claimants whose benefits have been exhausted or who have insufficient contributions to qualify for regular benefit. Table 22 gives the provincial distribution of persons establishing seasonal benefit periods in 1960 and 1961, average weeks paid and average benefits paid.

22.—Persons Establishing Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1960 and 1961

NOTE.—Based on a 10-p.c. sample.

Province	1960 ¹			1961		
	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid
	No.	No.	\$	No.	No.	\$
Newfoundland.....	29,530	13.21	279.78	30,230	13.17	304.38
Prince Edward Island.....	6,230	12.67	254.50	6,030	12.65	267.74
Nova Scotia.....	26,500	11.56	239.20	27,190	11.34	248.05
New Brunswick.....	30,850	11.43	237.63	32,435	11.34	251.40
Quebec.....	148,090	10.14	220.95	149,545	10.18	234.24
Ontario.....	113,680	9.77	206.63	119,135	10.13	227.12
Manitoba.....	17,250	9.67	204.71	19,745	9.54	221.72
Saskatchewan.....	13,740	9.86	210.63	14,675	9.71	226.81
Alberta.....	18,400	8.81	192.58	20,890	9.12	217.33
British Columbia.....	39,560	10.34	236.46	45,895	10.64	263.37
Totals.....	443,530	10.40	223.17	465,770	10.50	240.75

¹ Dec 1, 1959 to May 21, 1960.

Employment Service.—The Unemployment Insurance Commission operates a free employment service under authority of the Unemployment Insurance Act. The public employment offices, which had functioned under a joint federal-provincial arrangement for more than two decades, were taken over by the Commission on Aug. 1, 1941, and additional offices were established in all provinces except Quebec. The Commission established its own offices in Quebec and the provincial government thereupon reduced the number of its offices.

23.—Applications for Employment, Positions Offered and Placements Effectuated by Employment Offices, by Province, 1960 and 1961

NOTE.—Figures by province from 1920-57 are given in the corresponding table of previous Year Books beginning with the 1926 edition. Totals for 1920-37 are given in the 1938 edition, p. 766; for 1938 in the 1939 edition, p. 802; for 1939-48 in the 1951 edition, p. 686; for 1949 and 1950 in the 1960 edition, p. 790; and for 1951-59 in the 1962 edition, p. 741.

Province and Year	Applications Registered		Vacancies Notified		Placements Effectuated	
	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.
Newfoundland.....1960	67,892	6,199	8,745	1,857	7,750	1,212
1961	70,753	6,014	10,722	1,766	9,455	1,127
Prince Edward Island.....1960	17,424	5,429	6,615	2,958	5,373	2,550
1961	18,938	6,325	8,830	3,225	6,918	2,837
Nova Scotia.....1960	107,594	30,500	24,354	11,838	22,821	9,261
1961	118,068	31,730	26,671	12,496	24,721	9,756
New Brunswick.....1960	117,564	29,670	31,656	8,794	30,641	7,235
1961	114,189	33,363	30,871	10,875	30,703	9,067
Quebec.....1960	838,206	279,285	201,677	94,463	177,195	74,824
1961	885,367	272,283	235,620	118,371	210,387	93,463
Ontario.....1960	1,050,513	426,183	240,127	142,087	212,943	108,530
1961	1,049,915	425,599	297,109	170,083	262,370	132,046
Manitoba.....1960	144,674	56,922	45,278	26,833	38,441	20,209
1961	136,547	58,267	43,418	28,202	37,950	22,676
Saskatchewan.....1960	100,928	38,607	32,470	15,118	29,101	11,493
1961	104,719	40,329	31,735	15,950	28,917	12,623
Alberta.....1960	191,993	75,408	60,980	34,586	52,833	24,774
1961	196,059	76,226	71,326	38,079	64,082	26,959
British Columbia.....1960	409,784	159,224	72,186	66,290	64,769	56,340
1961	430,660	156,654	80,232	70,072	73,287	60,518
Totals.....1960	3,946,572	1,107,427	724,098	404,824	641,872	316,428
1961	3,125,195	1,106,790	836,534	469,119	748,790	371,072

Section 6.—Technical and Vocational Training

Because of the wide interest being shown in the development of technical and vocational education in Canada and the stimulation being advanced by governments through the provision of greatly expanded training facilities and programs, this subject is given detailed treatment in the following special article.

RECENT DEVELOPMENTS IN PUBLIC TECHNICAL AND VOCATIONAL EDUCATION IN CANADA*

At probably no other time in Canadian history has there been more interest in education and training than there is today. An important expression of this interest is the greatly enlarged federal-provincial programs that are under way in all ten provinces which are designed to raise the level of technical knowledge and increase the occupational competency of the labour force. The reasons underlying this expansion in technical and vocational facilities and training programs are many. It had been evident for many years, and particularly in the postwar period, that the shortage of training facilities had been a serious drawback to the development of effective technical and vocational programs in Canada. Research studies conducted by the federal Department of Labour have pointed up the need for expanded and improved technical and vocational training facilities, both in the educational system and in industry, as a result of such factors as the rapid advances in technology and their effect on occupational needs and training requirements; the school drop-out problem; the shortage of skilled manpower; the insufficiency of training programs in industry; and the rapid increase in the population in the age group 15-19 years.

The acceleration in technology, which has been particularly apparent in the postwar years, has brought a growing demand for workers with higher levels of education and

* Prepared (July 1963) by Phillip Cohen, Chief, Training Research Section of the Economics and Research Branch, Department of Labour, Ottawa.

training and with the ability to adapt to a continually changing work environment. A look at what has been happening to occupations points clearly to the growing need for more education and training. Estimates prepared by the federal Department of Labour show that in the period 1958-59 skilled, professional, and 'white-collar' jobs represented about 51 p.c. of employment in Canada, and that semi-skilled and unskilled occupations constituted some 30 p.c. Furthermore, the fastest growing occupations were those requiring higher levels of education and training. In the period 1949-59, professional occupations had increased by 71 p.c., skilled occupations by 38 p.c., and white-collar occupations by 34 p.c., while semi-skilled and unskilled occupations increased by only 24 p.c.

At the same time as the shift in occupations has been occurring, Canada has been faced with the serious problem of young people leaving school too early. The majority of youths who have been entering the labour force have not had sufficient education and training to meet the needs of industry. About one third of the young people who have entered elementary schools in recent years have left school at or before grade 8. Another third have left before completing high school.

In this regard, Canada faces an even greater problem in the next decade. The population in the age group 15-19 will increase by an estimated one quarter of a million persons over the period 1960-65 and in the last half of the decade the numbers will be even greater. It is essential, therefore, that these young people be provided with the kinds of education and training that will serve as effective paths to satisfying working careers in tomorrow's world.

The level of education and training of those already in the labour force is also cause for concern. About 43 p.c. of the work force in 1960 had an education of grade 8 or less, yet technological change has generated a need for workers with higher levels of education and training. Training programs in industry have not been increasing at a sufficient rate to meet either the growing demand for skilled people or the urgent demand for training facilities. Between 1946 and 1956, of the 280,000 skilled workers added to the labour force, 110,000 came from abroad. The heavy reliance on immigration as a major source for skilled and technical workers means that development of Canada's own manpower resources has been neglected to a considerable extent. Canada can no longer depend on immigration as a main source of trained manpower because the countries from which such manpower has traditionally been drawn also have a strong demand for skilled workers.

A recognition of all these factors culminated in the Technical and Vocational Training Assistance Act of December 1960, thus altering decisively the course of technical and vocational training. Essentially, the new legislation provided for greatly expanded assistance to the provinces to allow them more effectively to meet Canada's urgent need to train both the youth and adult populations.

The Pattern of Vocational Education and Training.—The pattern of vocational education and training in Canada varies from province to province and there are also variations within the provinces. There are basically three types of institutions offering vocational education—trade schools, secondary (or high) schools, and post-secondary technical institutes. Courses at the trade level do not usually require high school graduation; the grade level demanded, which varies according to province or trade, ranges from grade 8 to grade 11 or even grade 12. On the other hand, enrolment in technical institutes presupposes high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Training in schools is basically a provincial responsibility. Thus, most of the trade schools and institutes of technology across Canada are provincially operated, but many municipal school boards provide vocational courses as part of the regular high school program in technical or composite type schools.

Vocational education is also carried out under a system of apprenticeship training. A main feature of apprenticeship is that training is done mainly on the job with concurrent attendance in classes either during the evening or on a full-time basis during the day for periods ranging from three to ten weeks a year.

Federal Financial Assistance.—The Federal Government contributes substantially to the maintenance and development of vocational training facilities, recognizing vocational training as an important part of the economic development of the country. The financial involvement of the Federal Government in vocational training goes back half a century to the years immediately preceding the First World War. In 1913, the Agriculture Instruction Act provided \$10,000,000 to promote projects in agricultural training. The Technical Education Act of 1919 provided a similar amount for the development of industrial and technical education and introduced the principle of matching provincial capital expenditures. The Vocational Training Co-ordination Act of 1942, together with specific agreements signed by most of the provinces, established federal contributions toward vocational training, for both capital and operational expenditures. That Act was replaced in December 1960 by the Technical and Vocational Training Assistance Act (SC 1960-61, c. 6), which provides financial support to the provinces under two separate agreements: (1) the Technical and Vocational Training Agreement, which is the basic agreement and extends over the period Apr. 1, 1961 to Mar. 31, 1967; and (2) the Apprenticeship Training Agreement, a ten-year agreement which expires in 1964.

The new Act contains fundamental changes in the basic policy of federal financial assistance. Of perhaps greatest immediate effect is the provision that the Federal Government will contribute 75 p.c. of the total capital expenditures incurred by a province in the building and equipping of vocational training facilities up to Mar. 31, 1963, and 50 p.c. thereafter during the life of the Agreement.

The Minister of Labour has recently announced that an amendment will be introduced for the continuation beyond Mar. 31, 1963, of the 75-p.c. federal contribution up to a specified total for each province. This will allow provinces to share in the provision for capital facilities to an equal extent and will, at the same time, give them more time to put these training facilities into place.

The capital expenditure program under the new Act has given a tremendous impetus to the development of training facilities in Canada. As of Mar. 31, 1963, some 513 construction projects on new and existing schools, providing places for 138,000 additional students, were in various stages of completion across Canada. The total cost of these projects is \$508,000,000, of which the federal contribution is some \$323,000,000. The following table presents a summary of capital projects approved for Canada and the provinces.

**Capital Projects Approved under the Technical and Vocational Training Agreement,
April 1961¹ to Mar. 31, 1963**

Province or Territory	Projects	Total Cost ²	Federal Share	New Student Places Provided
	No.	\$	\$	No.
Newfoundland.....	15	28,258,258	21,055,075	3,670
Prince Edward Island.....	6	2,754,072	2,065,555	1,380
Nova Scotia.....	14	9,589,506	7,191,629	2,704
New Brunswick.....	14	7,374,381	4,792,504	2,215
Quebec.....	87	44,598,051	23,743,419	7,603
Ontario.....	259	319,915,532	200,089,747	98,556
Manitoba.....	56	7,037,562	4,934,802	2,180
Saskatchewan.....	8	16,957,534	8,224,611	3,654
Alberta.....	33	49,924,849	36,994,715	11,575
British Columbia.....	19	19,771,312	13,585,168	4,328
Yukon Territory.....	1	909,062	682,796	144
Northwest Territories.....	1	480,000	64,800	30
Canada.....	513	507,570,169	323,424,821	138,039

¹ Present federal-provincial Agreements entered into under the Technical and Vocational Training Assistance Act came into effect in April 1961.

² Estimates.

In addition to sharing in capital expenditures, the Federal Government also shares in the operating costs of the various programs conducted under the Agreement. The proportion of the federal share of such costs is indicated below.

Programs under the Technical and Vocational Training Agreement.—The ten different programs provided under this Agreement are closely correlated with the common objectives of training the country's labour force at all levels, below university, and in all fields.

Program 1, the *Technical and Vocational High School Program*, covers any courses or programs of regular secondary school, technical, vocational or composite high schools where the full-time courses have a minimum of 50 p.c. of the school time spent in instruction preparing for an occupation. Over the six-year period of the Agreement, the Federal Government will contribute up to a total of \$15,000,000 to the provinces on a sharing basis not to exceed 50 p.c. of provincial costs. Allotments are made on the basis of the number of persons in the 15-19 age group in each province.

Program 2, *Technician Training*, provides training at the post-secondary level. Training under this category covers engineering, science, business or other fields requiring advanced theoretical and practical training below the professional level. The Federal Government contributes 50 p.c. of provincial costs.

Program 3, *Trade and Other Occupational Training*, has a three-pronged objective: (1) to assist employed persons wishing to upgrade their skill; (2) to help those about to enter employment; and (3) to provide training for those individuals wishing to retrain for change of occupation. To qualify for training under this program, trainees must have left elementary or secondary schools and must be over the compulsory school attendance age. The Federal Government pays 50 p.c. of provincial costs.

Program 4, *Training in Co-operation with Industry*, may include the following: training to allow employees to upgrade their skills (including basic training in mathematics, science and languages), retraining for those required to learn new skills or occupations, and supervisory training. Projects undertaken under this program are developed jointly by the province and one or more employers or industries in the particular area. Training may be provided in public or approved private schools, in industrial establishments by means of full-time, part-day, day or evening, day release, sandwich, on-the-job type of programs, or by correspondence courses. The Federal Government contributes 50 p.c. of provincial expenditures on approved training programs.

Program 5, *Training of the Unemployed*, is designed to provide training for unemployed persons to improve their employment opportunities by increasing their basic education, trade, technical or occupational competence. Training under this program may be of the 'refresher' type or training for employment in an occupation previously followed by the trainee. The Federal Government may provide up to 75 p.c. of training costs when a minimum number of training days is given by a province in each fiscal year; otherwise, the federal share is 50 p.c.

Program 6, *Training of the Disabled*, provides for the technical or vocational or professional training, retraining, or vocational assessment of any disabled person who, because of a continuing disability, requires training to fit him for employment in a suitable occupation. One half of the provincial costs of approved programs is contributed by the Federal Government.

Program 7, *Training of Technical and Vocational Teachers*, includes training for technical and vocational teachers and for supervisors and administrators of technical and vocational programs. The federal share in such training is 50 p.c.

Program 8, *Training for Federal Departments and Agencies*, provides for training for members of the Armed Services or the Public Service as requested by any department or agency of the Federal Government. For such training or training services provided by a province under this program, the Federal Government will contribute up to 100 p.c. of training costs.



School-building activity is a major aspect of federal-provincial co-operation to raise the level of technical knowledge and increase the competency of the labour force. By December 1963, three years after the passing of the Technical and Vocational Training Assistance Act, federal approval had been given for the new construction and additions or alterations to 543 technical and vocational high schools, institutes of technology and trade schools across Canada, providing for the accommodation of an additional 145,000 students.



Thousands of men and women have found employment during the past two years as a result of the unemployed retraining program operated jointly by the National Employment Service and boards of education; 35 communities offer about 60 different courses, ranging in length from one to ten months.



⏏ Parkway Vocational School in Toronto, completed in 1963, accommodates 760 students.



The expansion of physical facilities and the growing number of students necessitate an enlarged and highly qualified teaching staff. To assist in this provision, a federal-provincial program is in operation for the training and up-grading of technical and vocational teachers.

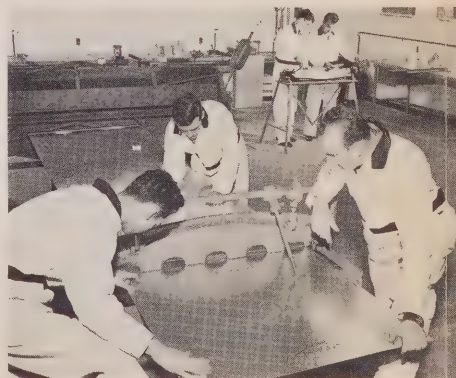
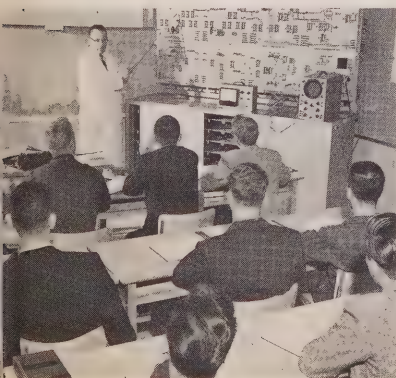


Governments and industry co-operate to up-grade the qualifications of the employed worker; employees from several adjacent establishments attend class three hours a day for six months to increase their knowledge of mathematics, science and English.

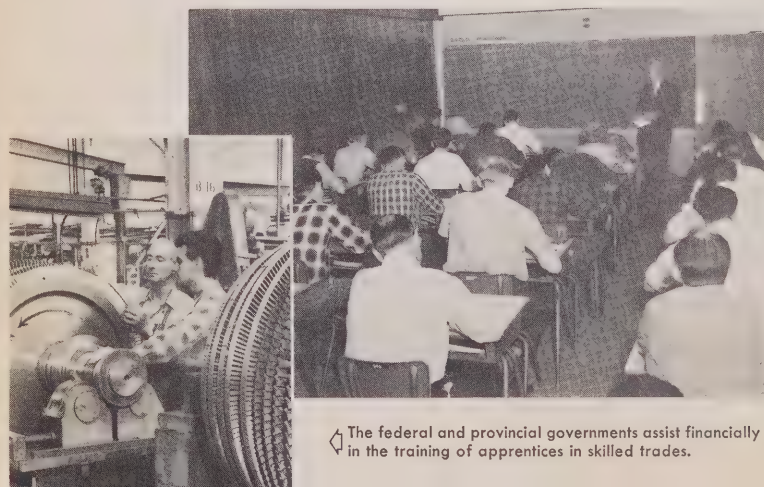
⏏ The first student enrolling at the Northern Alberta Institute of Technology in Edmonton; in 1963 the Institute opened to accommodate 2,500 students.

The Eastern Ontario Institute of Technology in Ottawa will be ready for its first complement of 800 students in 1964.

⏏ About 14,000 full-time students were enrolled in one- to four-year post-high school technical courses in the autumn of 1963; 35 institutions across the country provided such courses.



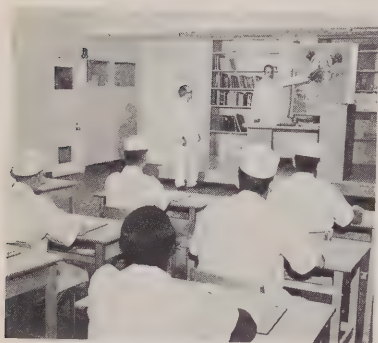
⏏ Typical of new post-secondary facilities are those of the Nova Scotia Institute of Technology in Halifax, which opened in 1963 with a registration of 900 students.



⏏ The federal and provincial governments assist financially in the training of apprentices in skilled trades.

TECHNICAL TRAINING FOR MODERN INDUSTRY

The nation's greatest asset is not in its reserve of natural resources but in the occupational and technical competency of its workers and in the potential productivity of its youth. Changing conditions of employment, technology and productive practices have created problems of displacement, unemployment and insecurity for unskilled workers and a dearth of persons trained in newly required skills. The growing need to overcome these and attendant social and economic problems has prompted an unprecedented expansion of technical and vocational education facilities and programs in Canada, the object of which is to prepare youth for entry into skilled and specialized employment and to provide for the adult the opportunity of increasing proficiency in his chosen field.



The co-ordinated manpower development and education programs include training at all levels below professional—the operator, the apprentice, the skilled worker, the craftsman and the technician—in all occupational fields in primary, secondary, service and commercial industries.



Photos:

Alberta Government
British Columbia Department of Education
Federal Department of Labour
John Inglis Co. Limited
Nova Scotia Information Service
Ontario Department of Travel and Publicity
Parkway Vocational School, Toronto
Philips Electronics Industries Ltd.
Vancouver School Board.

Program 9, *Student Aid*, is a means whereby financial assistance may be given to students at university and to nurses-in-training. At the discretion of the province, assistance may take the form of a grant or loan or combination of both. The federal contribution is limited by a fixed allotment.

In addition, the Federal Government contributes up to 50 p.c. of provincial costs of preparing, printing and servicing technical and vocational correspondence courses.

The Apprenticeship Training Agreement.—This Agreement has provided, since 1944, for a federal reimbursement of 50 p.c. of provincial expenditures for the training of apprentices in classes or their supervision on the job. Apprentices must be registered with the provincial Departments of Labour in designated trades. The purpose of this Agreement is to encourage and assist in the development of organized training for apprentices in all skilled trades.

Developments under the Various Programs.—A large part of the funds provided for new vocational school buildings is being used to expand facilities under Program 1. By mid-1963, 228 vocational secondary school projects (including 170 new schools) were under construction in Ontario to implement the new Ontario Secondary School Program. Alberta had 25 vocational high school projects (including 16 new schools) under construction. No vocational secondary school projects are under way in Quebec, Newfoundland or New Brunswick, but each of these provinces is expanding facilities at the trade school and technical institute level. Of the 513 projects now approved, 285 concern either major additions to existing vocational high schools or new buildings. The secondary vocational school programs are being re-examined in those provinces where expansion is under way. New programs and courses are being introduced and tested.

There are a number of problems to be solved, such as the co-ordination of Program 1 with all other programs and the needs of industry, full utilization of facilities that now represent a very large capital investment, and the development of recognized standards.

In 1961-62, estimated full-time enrolments in technical, vocational and composite high schools numbered 127,195 compared with 114,952 in 1960-61 and 104,676 in 1959-60.

One of the fastest growing occupational fields in Canada is that of technicians. In recent years, a number of institutes of technology at the post-secondary level have been established to help meet this growing need. Four new institutes of technology are in various stages of construction and additions are being made to 13 existing institutes. Additional facilities are being provided in 16 projects that have been or are being constructed as combined trade schools and institutes of technology. In 1961-62, 29 institutes and over 25 trade schools offered courses at the post-secondary level. Full-time enrolment for 1961-62 numbered 11,178 students and graduates numbered 1,961, contrasted with an estimated enrolment of 8,333 and 1,688 graduates in 1959-60.

Trade school projects approved under the Agreement as of Mar. 31, 1963 numbered 116 (including 46 new schools). Additional facilities are also being provided by the 16 combined trade and technical institutes mentioned previously. At the end of March 1963, there were 6,319 students enrolled in trade school courses under Program 3, exclusive of trainees who were unemployed or who were receiving training under other programs. Annual enrolments would be very much larger than the figure given because of continual enrolments throughout the school year in courses ranging in duration from five days to two years.

A considerable expansion of the training in co-operation with industry program is deemed to be essential for the development of manpower skills. In considering how training might best be encouraged in industry, a broad examination of the training needs in industry has been undertaken by the Department of Labour as a basis for producing practical proposals to encourage, strengthen and broaden existing training activities. Such an enquiry will be helpful in establishing guidelines for the development of new and vigorous training programs wherever needed in industry and in bringing about a fuller co-ordination of the various groups involved in such training.

The response to basic training for skill development—mathematics, science and communication skills—of those already in the labour force, both employed and unemployed, is noteworthy. There is a growing realization that such training is essential for the adaptation of workers to rapidly changing industrial conditions. There is considerable interest in the setting of standards for basic training which will be accepted as the equivalent of the usual entrance requirements in trade schools and institutes of technology. A significant development in this connection is an experimental co-operative scheme involving three employers in the Leaside area of Toronto, which began in January 1963. Working in co-operation with unions, provincial and federal governments, and local school board officials, these companies are providing a six-month course to upgrade their workers in mathematics, science and English to a level where they can take further training and retraining in specific skills. Trainees include men and women from a cross-section of workers, ranging in age up to 45, who have completed grades 8 or 9. The new courses are designed to raise the levels of attainment in the subjects given by two school grades, and the Ontario Department of Education has agreed to issue an Equivalency Certificate on a subject-grade basis when the trainee completes a course. This pilot project is being conducted under Program 4, Training in Co-operation with Industry. Basic training for skill development programs is also being provided in other provinces for the employed as well as the unemployed worker.

A strong effort is being made to train or retrain unemployed persons. Over the period Apr. 1, 1962 to Mar. 31, 1963, 38,439 persons were enrolled for training in some 94 occupations under Program 5; in the previous year, 26,887 students were enrolled for training. The substantial increase in enrolment is a measure of the emphasis being placed on this form of training.

**Unemployed Persons Enrolled for Training, by Province, Years Ended
Mar. 31, 1962 and 1963**

Province or Territory	1961-62	1962-63
	No.	No.
Newfoundland.....	411	402
Prince Edward Island.....	123	183
Nova Scotia.....	694	873
New Brunswick.....	3,143	4,076
Quebec.....	8,308	6,759
Ontario.....	7,344	18,511
Manitoba.....	2,083	2,325
Saskatchewan.....	1,168	1,177
Alberta.....	1,759	1,658
British Columbia.....	1,854	2,416
Yukon Territory.....	—	—
Northwest Territories.....	—	59
Canada.....	26,887	38,439

Disabled persons given training in the fiscal year 1962-63 numbered 2,966, compared with 2,765 in the previous fiscal year.

Teacher training programs have been expanded in most provinces to meet both immediate and long-term needs for technical and vocational training teachers. Although at present a number of short courses are being conducted to meet immediate needs, there is a definite trend toward acquiring at least one year of pre-service teacher education for individuals who wish to teach in secondary schools or adult vocational schools.

There were 20,576 apprentices registered in eight provinces (excluding Quebec and Prince Edward Island) as of June 30, 1962. Quebec is not a party to the Apprenticeship Agreement and Prince Edward Island signed the Agreement in 1962. In 1950, the number of registered apprentices was 9,482, which means that over the period 1950-62 the number had more than doubled. Completions over this period rose from 1,807 to an estimated 4,400.

Advisory Bodies.—The advisory body to the Minister of Labour under the Act is the National Technical and Vocational Training Advisory Council which provides a national forum for the discussion of matters pertaining to the development of training of Canada's manpower. The Council has a membership of 23, including representatives from employer organizations, organized labour, women's organizations, agriculture, Canadian veterans, the Canadian Association of Administrators of Labour Legislation, and provincial governments. The major continuing committees of the Council are the National Apprenticeship Committee and the National Advisory Committee on Technological Education, the latter being concerned with the development and co-ordination of interprovincial programs for educating technicians and technologists.

Provincial advisory and consultative committees on the technical and vocational training of manpower have also been established in most provinces under the Act. These committees include representation from employers, labour, provincial departments of education, youth and labour, and the National Employment Service.

Research Needs.—The full effects and accomplishments of the current program of technical and vocational training in Canada will not be known for some time, since it is still in the early stages of development and there are a number of problems to be overcome. A good deal of consideration is being given to the needs and problems that have arisen as a result of the large expansion of facilities and the objectives of the legislation, both at the federal and provincial levels.

It is recognized that the building of schools and the expansion of programs alone are not the complete answer to the training problem. There is a need to achieve a proper balance in the facilities being built, to improve the competency of teachers and teaching methods, to improve courses at all levels of technical education to better meet the needs of individuals and the changing requirements of industry, to bring about a better integration between the schools and industry and define the role that each can most effectively play in the training of manpower, and, most important, to determine present and future occupational requirements. The development of an educational-training system which takes into consideration the unfolding requirements of a changing economy for trained people should be based on continuing research activities to identify these needs, to throw light on their consequences for training policies and programs, and to assess the effectiveness of various kinds of training.

Recognition of the essential contribution of research to the development of technical and vocational training programs is contained in the Act, in that it provides for an expanded federal research program, which can be undertaken in co-operation with any province or provinces, in such areas as changing needs for training manpower, the relationship between technical and vocational training and the requirements of the economy, the development of course content through trade analyses, and the development of training standards.

Section 7.—Industrial Accidents and Workmen's Compensation

Subsection 1.—Fatal Industrial Accidents

Statistics of fatal industrial accidents have been compiled by the federal Department of Labour since 1903. The data are now obtained from provincial Workmen's Compensation Boards, the Board of Transport Commissioners and other government authorities, and from press reports.

Of the 1,086 fatal accidents to industrial workers that occurred during the year 1961, 275 were the result of the victims being struck by objects—56 by falling trees or limbs, 31 by landslides or cave-ins, 27 by automobiles or trucks, 25 by materials falling from stockpiles and loads, 21 by trains or other railway vehicles, and 15 by objects being hoisted or conveyed. Falls and slips were responsible for 246 industrial deaths, of which 229 were falls to different levels, including 83 deaths caused by falls into rivers, lakes, seas or harbours, 35 by falls from scaffolds or stagings, 24 by falls from buildings, roofs and towers, and 18 by falls from ladders or stairs. Collisions, derailments,

wrecks, etc., were responsible for 193 fatalities—automobiles and trucks were involved in 110, aircraft in 38, and tractors and loadmobiles in 28. The classification "caught in, on, or between objects, vehicles, etc." included 122 fatalities, 43 of which were caused by tractors and loadmobiles, 22 by automobiles and trucks, and 21 by elevators, hoisting and conveying apparatus. Exposure to dust, poisonous gases and poisonous substances caused 90 fatalities and contact with electric current was responsible for 57. Conflagrations, explosions and exposure to hot substances caused 57 deaths, 36 were the result of over-exertion, strain, etc., and 10 fatalities were caused by miscellaneous accident types.

24.—Fatal Industrial Accidents, by Industry, 1958-61

Industry	Numbers				Percentages of Total			
	1958	1959	1960	1961	1958	1959	1960	1961
Agriculture.....	97	101	69	68	7.6	7.6	6.1	6.3
Logging.....	129	143	131	99	10.2	10.8	11.6	9.1
Fishing and trapping.....	38	72	27	40	3.0	5.4	2.4	3.7
Mining, non-ferrous smelting and quarrying.....	231	175	180	135	18.2	13.2	15.9	12.4
Manufacturing.....	166	195	186	178	13.1	14.7	16.4	16.4
Construction.....	281	297	199	238	22.1	22.4	17.4	21.9
Electricity, gas and water production and supply.....	31	33	36	36	2.4	2.5	3.2	3.3
Transportation, storage and communications.....	163	182	154	152	12.8	13.7	13.6	14.0
Trade.....	40	50	51	52	3.2	3.8	4.5	4.8
Finance.....	4	2	2	1	0.3	0.2	0.2	0.1
Service.....	89	76	99	87	7.0	5.7	8.7	8.0
Totals.....	1,269	1,326	1,134	1,086	100.0	100.0	100.0	100.0

Subsection 2.—Workmen's Compensation*

In all provinces legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment, or for disablement caused by a specified industrial disease, except where the workman is disabled for fewer than a stated number of days. The Acts of all provinces provide for a compulsory system of collective liability on the part of employers. To ensure payment of compensation, each Act provides for an accident fund, administered by the province, to which employers are required to contribute at a rate determined by the Workmen's Compensation Board in accordance with the hazards of the industry. A workman to whom these provisions apply has no right of action against his employer for injury from an accident during employment. The Acts vary in scope but in general they cover construction, mining, manufacturing, lumbering, transportation and communications and the operation of public utilities. The Acts also cover various types of commercial establishments. Undertakings in which not more than a stated number of workmen are usually employed are excluded in some provinces. In Ontario and Quebec, public authorities, railway and shipping companies, and telephone and telegraph companies are individually liable for compensation as determined by the Board and pay a proportion of the expenses of administration. A federal Act provides for compensation for accidents to Federal Government employees according to the scale of benefits provided by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the Merchant Seamen Compensation Act.

* More detailed information is given in the Department of Labour publication *Workmen's Compensation in Canada, A Comparison of Provincial Laws*.

Benefits in case of disability include all necessary medical care and hospitalization, cash payments during the period of temporary disability to indemnify the injured workman for loss of wages, a life pension for any resulting permanent disability, and rehabilitation services. In the case of the death of the workman, a widow is granted a monthly pension, a special lump sum payment, an allowance for funeral expenses and a monthly payment for each child under the age limit provided by the law. When there is no dependent widow or children and there are other dependants such as a parent or parents, an award is made which, in the judgment of the Board concerned, is proportionate to the pecuniary loss sustained.

Table 25 gives the number of industrial accidents reported by each of the provinces and the amount of compensation paid by Workmen's Compensation Boards in the years 1960 and 1961.

25.—Industrial Accidents Reported and Compensation Paid by Workmen's Compensation Boards, 1960 and 1961

Year and Province	Industrial Accidents Reported					Compensation Paid ²
	Medical Aid Only ¹	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	\$
1960						
Newfoundland.....	5,537	4,823	112	26	10,498	1,725,883
Prince Edward Island.....	1,043	731	13	4	1,791	211,103
Nova Scotia.....	10,336	6,977	529	37	17,879	4,544,388
New Brunswick.....	11,452	7,585	212	32	19,311	2,332,930
Quebec.....	..	..	..	220	100,704	23,583,531 ³
Ontario.....	172,498	64,992	2,710	269	240,469	50,418,067 ³
Manitoba.....	12,787	8,931	331	22	22,071	4,008,765
Saskatchewan.....	12,140	9,725	142	25	22,032	5,255,037
Alberta.....	26,457	19,101	797	116	46,471	8,772,128
British Columbia.....	38,715	21,518	1,037	161	61,431	20,826,428
Totals, 1960.....	..	..	..	912	542,657	121,678,260
1961						
Newfoundland.....	5,317	3,495	41	11	8,864	1,994,016
Prince Edward Island.....	1,053	732	21	3	1,809	347,915
Nova Scotia.....	9,687	6,166	362	33	16,248	4,710,954
New Brunswick.....	9,097	7,421	223	23	16,764	2,387,292
Quebec.....	..	..	..	204	99,502	24,860,223 ³
Ontario.....	175,876	61,148	2,593	273	239,890	51,463,457 ³
Manitoba.....	12,375	9,019	415	28	21,837	4,065,252
Saskatchewan.....	12,210	9,976	81	35	22,302	5,315,217
Alberta.....	29,062	18,976	738	107	48,883	9,735,805
British Columbia.....	41,556	20,201	1,097	139	62,993	21,207,124
Totals, 1961.....	..	..	..	856	539,092	126,087,255

¹ Accidents requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies in the several provinces.

² Includes, except where noted otherwise, payments to compensate loss earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities.

³ Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec Workmen's Compensation Acts.

Section 8.—Organized Labour in Canada

At the beginning of 1963, 1,449,200 workers belonged to labour organizations active in Canada, an increase of almost 2 p.c. over the 1962 membership. Seventy-five per cent of the organized workers were members of unions affiliated with the Canadian Labour Congress (CLC). Of the unions within the CLC, a major group belonged also to the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) in the United States. Another 8 p.c. of union membership in Canada was in unions affiliated with the Confederation of National Trade Unions, and 16 p.c. was represented by unaffiliated international, national or local unions. About 2 p.c. of the total union membership in Canada belonged to unions having no affiliation with a central labour body in Canada but linked with the AFL-CIO.

The 1963 total union membership represented a net increase of 26,000 over the previous year. Sixteen unions operating in Canada reported increases of 1,000 members or more; the Steelworkers added 8,000, recording the largest increase for any single union, and the Auto Workers reported a gain of 4,300. On the other hand, a number of unions experienced a falling-off in membership during the year; the membership of the Mine, Mill and Smelter Workers was down by 8,000, the Teamsters' membership by 3,500 and the Seafarers by 2,400. Six other unions reported decreases of 1,000 or more.

Of the 1,449,200 union members reported in the 1963 survey, 1,031,700 belonged to international unions having branches in both Canada and the United States and in most cases belonging to central labour bodies in both countries. Of the 110 international unions active in Canada in January 1963, 87 with 882,200 members were affiliated with the CLC and the AFL-CIO; three with 12,600 members were affiliated with the CLC only; and ten with 30,500 members were affiliated with the AFL-CIO only. Ten, accounting for some 106,300 members, were without any affiliation.

National unions active in Canada numbered 51 with 350,900 members in January 1963. Of these, 18 with 163,200 members were affiliated with the CLC, 13 with a membership of 104,500 were within the Confederation of National Trade Unions, and 20 with 83,200 members were without affiliation.

International and national unions had almost 1,382,600 members in 161 unions at the beginning of 1963. Canadian membership in these unions ranged in size from fewer than 10 to the 90,000 reported by the United Steelworkers of America. The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America, with an increase of 4,300 members to a total of 61,100, replaced in second place the United Brotherhood of Carpenters and Joiners of America with 60,200 members. Among the national unions, the National Union of Public Employees with 52,900 members continued to rank first in size, followed by the 35,200-member Canadian Brotherhood of Railway, Transport and General Workers.

The grand total of 1,449,200 members reported by labour organizations in 1963 was equal to about 30 p.c. of the estimated total number of non-agricultural paid workers in Canada.

26.—Union Membership in Canada, 1935-63

Year	Members	Year	Members	Year	Members	Year	Members
	'000		'000		'000		'000
1935.....	281	1942.....	578	1949 ^{1,2}	1,006	1957.....	1,386
1936.....	323	1943.....	665	1951 ¹	1,029	1958.....	1,454
1937.....	323	1944.....	724	1952.....	1,146	1959.....	1,459 ³
1938.....	382	1945.....	711	1953.....	1,220	1960.....	1,459
1939.....	359	1946.....	832	1954.....	1,268	1961.....	1,447
1940.....	362	1947.....	912	1955.....	1,268	1962.....	1,423
1941.....	462	1948.....	978	1956.....	1,352	1963.....	1,449

¹ Figures for years up to and including 1949 are as at Dec. 31; figures from 1951 are as at Jan. 1.
 foundland included from 1949.

² New-
³ Adjustment in coverage resulted in a net addition of approximately 23,000 members.

27.—Union Membership, by Type of Union and Affiliation, as at January 1963

Type and Affiliation	Unions	Locals	Membership
International Unions	110	4,424	1,031,658
AFL—CIO/CLC.....	87	4,031	882,222
CLC only.....	3	42	12,514
AFL—CIO only.....	10	49	30,507
Unaffiliated railway brotherhoods.....	2	123	9,347
Other unaffiliated unions.....	8	179	96,968
National Unions	51	2,289	350,918
CLC.....	18	1,442	163,227
CNTU.....	13	490	104,497
Unaffiliated unions.....	20	357	83,194
Totals, International and National Unions	161	6,713	1,382,576
Directly Chartered Local Unions	232	232	27,926
CLC.....	181	181	21,846
CNTU.....	51	51	6,080
Independent Local Organizations	128	128	38,679
Grand Totals	521	7,073	1,449,181

A list of the individual international and national unions, with number of locals and membership in Canada, is carried in the Department of Labour publication *Labour Organizations in Canada*, available from the Queen's Printer, Ottawa, price 35 cents.

Section 9.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Department of Labour on the basis of reports from the Unemployment Insurance Commission. Table 28 covers strikes and lockouts involving six or more workers and lasting at least one working day, and strikes and lockouts lasting less than one day or involving fewer than six workers but exceeding a total of nine man-days. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Where the number of workers involved varied in the course of a stoppage, the peak figure is used in tabulating annual totals. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included in the number of workers involved.

Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. Where the number of workers involved varied during the period of a stoppage, an appropriate adjustment is made in the calculation as far as this is practicable. The duration in man-days of all work stoppages in a year is also shown as a percentage of estimated working time, based on the annual average of all non-agricultural paid workers in Canada.

The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

28.—Strikes and Lockouts by Industry, 1962 with Totals for 1958-62

NOTE.—Comparable statistics, except for 1961, are given in the corresponding table of previous Year Books; the latter are available in the Department of Labour annual publication *Strikes and Lockouts in Canada*.

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Forestry	2	2	128	1,540
Mining	9	10	7,688	41,040
Metal	1	2	1,040	29,310
Non-metal	1	1	170	1,450
Mineral fuels	7	7	6,478	10,280
Manufacturing	131	140	34,504	778,700
Foods and beverages	18	20	1,514	24,730
Tobacco products	1	1	260	2,990
Rubber products	6	6	943	3,590
Leather products	3	3	485	25,110
Textile products	7	7	2,927	83,510
Knitting mills	3	3	304	1,030
Clothing	7	7	522	5,930
Wood products	13	13	1,015	23,100
Furniture and fixtures	4	5	312	7,610
Paper products	5	5	1,310	8,030
Printing and publishing	2	2	87	3,230
Primary metals	13	14	4,392	104,670
Metal fabricating	13	14	3,325	14,420
Machinery	4	6	4,794	60,650
Transportation equipment	8	9	6,651	143,850
Electrical products	4	5	424	5,080
Non-metallic mineral products	12	12	2,964	116,620
Chemical products	1	1	1,489	124,700
Miscellaneous manufacturing industries	7	7	786	19,850
Construction	95	99	18,596	197,720
Transportation and Utilities	25	27	11,769	343,280
Transportation	19	21	11,469	339,190
Communication	1	1	12	190
Power, gas and water	5	5	288	3,900
Trade	22	25	987	20,360
Service	2	4	538	34,310
Personal services	1	3	533	34,290
Miscellaneous services	1	1	5	20
Administration	4	4	122	950
Provincial administration	1	1	22	110
Local administration	3	3	100	840
Totals	1962 290	311	74,332	1,417,900
.....	1961 272	287	97,959	1,335,080
.....	1960 268	274	49,408	738,700
.....	1959 201	216	95,120	2,226,890
.....	1958 251	259	111,475	2,816,850

Section 10.—Canada and the International Labour Organization

The Department of Labour is the officially designated liaison between the Government of Canada and the International Labour Organization. The ILO was established in 1919, in association with the League of Nations under the Treaties of Peace, with the object of improving labour and social conditions throughout the world by international agreement and legislative action. Under an agreement approved by the General Conference of the International Labour Organization and by the United Nations General Assembly in 1946, the Organization became a specialized agency of the United Nations although it retained its autonomy.

The ILO is an association of 107 Member States, financed by their governments and democratically controlled by representatives of those governments and of their organized employers and workers. It is comprised of three main organs: (1) the Governing Body; (2) the International Labour Office; and (3) the International Labour Conference. Ten tripartite industrial committees have been established to deal with problems of important world industries, by the holding of regional and special technical conferences, and by technical assistance to aid under-developed countries in such fields as co-operatives, social security, vocational training, productivity techniques and employment service organization. The ILO also administers numerous technical aid projects in developing countries on behalf of the United Nations Special Fund and the Expanded Program of Technical Assistance.

The Governing Body consists of 40 members—20 government representatives, 10 employers' representatives and 10 workers' representatives. It is planned to increase the membership in June 1963 to 48—24 government representatives, 12 employers' representatives and 12 workers' representatives. Of the government seats, each of the 10 Member States of chief industrial importance (of which Canada is one) holds a permanent place and the other 10 government representatives are elected triennially by the Conference. The worker and employer members are elected by their groups every three years at the Conference. The Governing Body usually meets three times a year and has supervision over the work of the International Labour Office and the various Conferences and Committees, in addition to framing the budget and approving the agendas of the Conferences and meetings. Canada's representative on the Governing Body is the Deputy Minister of Labour for Canada.

The International Labour Office acts as the permanent secretariat of the ILO and as a world research and information centre and publishing house on subjects concerned with working and living conditions. In the operational field it assists Member States by furnishing experts on manpower training and other types of technical assistance. The ILO maintains branch offices in all parts of the world; the Canada Branch is located at 202 Queen Street, Ottawa.

The International Labour Conference is a world assembly for the consideration of labour and social problems. It meets annually and is attended by four delegates from each Member State (two representing the government, one representing the employers and one representing the workers) accompanied by technical advisers. The Conference formulates international standards concerning working and living conditions in the form of Conventions and Recommendations; the former are subject to ratification by the Member States concerned.

There have been 46 Sessions of the International Labour Conference, at which 118 Conventions and 117 Recommendations have been adopted. Canada has ratified 20 of these Conventions, of which 12 concern maritime and dock labour. In Canada the provincial legislatures are the competent legislative authorities with jurisdiction over the subjects covered by most of the ILO Conventions and Recommendations. The Department of Labour, as the official link with the International Labour Organization, is responsible for forwarding to the ILO reports on ratified Conventions as well as periodic reports on many other industrial and social matters. Canada is represented at most of the ILO annual and special meetings, and accounts of the discussions and decisions are regularly published in the *Labour Gazette*.

CHAPTER XVII.—TRANSPORTATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. The country extends 4,000 miles from east to west and its main topographic barriers run in a north-south direction, so that sections of the country are cut off from one another by such water barriers as Cabot Strait and the Strait of Belle Isle separating the Island of Newfoundland from the mainland; by rough, rocky forest terrain such as the New Brunswick-Quebec border region and the areas north of Lakes Huron and Superior dividing the industrial region of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the prairies and the Pacific Coast. Unevenly distributed along a narrow southern strip of Canada's vast area is its relatively small population of 18,896,000 (estimate of June 1, 1963). To such a country, with a population so dispersed and producing for export as well as for consumption in distant parts of the country itself, efficient and economical transportation facilities are necessities of existence.

A special article giving some idea of the competitive problems that have faced the major agencies of transport during recent years of economic and technological change appears in the 1962 Year Book at pp. 753-758.

PART I.—GOVERNMENT CONTROL OVER AGENCIES OF TRANSPORTATION

The Federal Government's control and regulation of transportation reflect to a considerable extent conditions that date back to the period when the railways possessed a virtual monopoly of transportation within the country. Although federal regulation was a direct outcome of such particular matters as the prevention of unjust discrimination in

rates and charges resulting from monopoly conditions in the industry and the safety of transportation facilities and operating practices, yet the railways have been so involved in the public interest that their regulation has been extended to become the most comprehensive of any industry in Canada.

In the meantime, conditions in the transportation industry have been drastically altered by the increasing competition arising from the advance of highway transportation and a large part of the present competition between common carriers has become a permanent feature of the transportation industry. In these circumstances, it is not surprising that regulations, which under monopoly conditions were not onerous to the railways or were purely nominal in their effect, are now alleged to have become increasingly restrictive and hampering under highly competitive conditions. Regulatory authorities are therefore faced with the problem of piecemeal revision of their regulations—retaining those where railway monopoly or near-monopoly conditions still make them necessary in the public interest, and relaxing those where competition can be relied on to protect the public in order to enable the railways to meet this competition more effectively. The emphasis has shifted from the regulation of monopoly to maintaining a balance between the several competing modes of transport.

In 1936, the amalgamation of the Department of Railways and Canals and the Department of Marine, together with the Civil Aviation Branch of the Department of National Defence, to form the Department of Transport brought under one control railways, canals, harbours, marine and shipping, civil aviation, radio and meteorology.

Road and highway development is mainly under provincial or municipal control or supervision. According to the judgment of the Judicial Committee of the Privy Council dated Feb. 22, 1954, jurisdiction over interprovincial and international highway transport rests with the Federal Government, but the Motor Vehicle Transport Act, 1954 gives to all provinces, at their option, the authority to apply to interprovincial and international highway transport the same regulations respecting certificates of public convenience and necessity and rates as they apply to undertakings operating entirely within the province. This Act has since been proclaimed in seven provinces.

The Board of Transport Commissioners for Canada.—The Board of Transport Commissioners for Canada was created and initially named the Board of Railway Commissioners for Canada by the Railway Act, 1903, and was given its present name by the Transport Act, 1938. It was organized on Feb. 1, 1904, and succeeded to all the powers and duties of its predecessor, the Railway Committee of the Privy Council. The Board, now consisting of a Chief Commissioner, a Deputy Chief Commissioner, an Assistant Chief Commissioner and three Commissioners, has extensive regulative and administrative powers and is also a statutory court of record, so constituted by the Railway Act and recognized as such by other courts. The finding or determination of the Board upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of Canada upon a question of law or a question of jurisdiction with leave of a judge of that Court, or by the Governor in Council.*

The Board has jurisdiction under more than a score of Acts of Parliament, including jurisdiction, under the Railway Act and the Transport Act, over transportation by railway and by inland water, and over communication by telephone and telegraph.

* The Board's judgments are reported in *Canadian Railway Cases* and *Canadian Railway and Transport Cases*, and its judgments, orders, rulings and regulations are published by the Queen's Printer, Ottawa, in what is known as *J.O.R. & R.*

Under the Railway Act its jurisdiction is, stated generally, in respect of construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation, freight and passenger rates, and uniformity of railway accounting. The Board also has certain jurisdiction over telephones and telegraphs, including regulation of the telephone tolls of The Bell Telephone Company of Canada, the British Columbia Telephone Company, the Bonaventure and Gaspé Telephone Company and the Yellowknife Telephone Company, over tolls for express traffic and tolls for the use of international bridges and tunnels.

Regulation of railway freight and passenger rates is one of the Board's principal tasks. Except for certain statutory rates, it has power "to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require"; it may disallow any tariff that it considers to be unjust or unreasonable or contrary to any provision of the Railway Act; it may prescribe other tolls in lieu of the tolls disallowed, or require the railway company to substitute a tariff satisfactory to the Board. Since the end of World War II there has been a succession of applications for authority to make general freight rate increases and general telephone rate increases.

A review of transport regulation was undertaken by the Royal Commission on Transportation, under the chairmanship of the Hon. W. F. A. Turgeon, which held extensive hearings in 1949-50 and issued its Report in 1951 (see 1952-53 Year Book, p. 741). Certain of its recommendations were incorporated into the Railway Act by amendments made in 1951 (see 1962 Year Book, p. 760).

Under the Transport Act, the Board entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Board must be satisfied that public convenience and necessity require such transport. The Board also has regulative powers over tolls for such transport.

A Royal Commission was appointed May 13, 1959 with the Hon. C. P. McTague named as chairman (later succeeded by M. A. MacPherson) to inquire into the railway rate structure and other matters affecting transportation. Its findings were published in three volumes, which appeared between March 1961 and July 1962.

On July 8, 1959, Parliament passed the Freight Rates Reduction Act designed as a relief measure for shippers. The Act provided a fund of \$20,000,000 to permit a reduction in class and commodity rates (other than competitive rates) on Canadian railways for a period of one year to Aug. 1, 1960. In compliance with the Act, the Board of Transport Commissioners ordered the substitution of an increase of 10 p.c. for the permissive increase of 17 p.c. authorized in November 1958 but suspended pending the findings of the Royal Commission. A further reduction, substituting an increase of 8 p.c. in lieu of 10 p.c. was ordered effective May 1960; these reduced rates have continued in effect. Later amendments extended the Freight Rates Reduction Act to Apr. 30, 1961 and then to Apr. 30, 1962 and the authorized expenditure was raised from \$20,000,000 to \$35,000,000 and then to \$55,000,000. In respect of the year 1961, interim payments related to recommendations of the Royal Commission pending its complete report were authorized by Parliament to the amount of \$50,000,000 to compensate the railway companies for maintenance of their rates on freight traffic at the reduced levels.

The Freight Rates Reduction Act was not extended beyond Apr. 30, 1962, but authority for payments in respect of reduced freight rates between that date and Mar. 31, 1963 was

provided under Governor General's Warrant. Provision for extended authority in respect of the period Apr. 1, 1963 to Mar. 31, 1964 for payments of \$50,000,000 in respect of the calendar year 1963 was made in Supplementary Estimates (A) for the year ending Mar. 31, 1964.

Total payments under the so-called \$20,000,000 and \$50,000,000 subsidies, respectively, have been \$72,300,000 for the period Aug. 1, 1959 to June 30, 1963 and \$124,800,000 for the period Jan. 1, 1961 to June 30, 1963.

The Air Transport Board.—The Air Transport Board was established in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950 and 1952. The Board has three members including the Chairman, and the staff is comprised of a Senior Adviser; a Legal Branch; an Operations Branch which includes the Traffic Division, Operations Analyst, Special Traffic Adviser, International Relations Division, and the Licensing and Inspection Division; an Economic and Accounting Branch which includes the Economics Division, Audit Division and Financial Analyst; and a Secretary's Branch which includes the Administrative Division. In addition, a small staff is located in Montreal to serve the Senior Canadian Representative on the Council of the International Civil Aviation Organization.

The Board is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. As provided by the Act, the Board issues Regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, applications for licences to operate commercial air services, accounts, records and reports, ownership, transfers, consolidations, mergers and leases of commercial air services, traffic tolls and tariffs, and other related matters. Detailed regulatory instructions are issued by the Board in the form of General Orders and Rules, relating to all air services, or groups of air services; Board Orders relating to individual air services; and Circulars for general guidance and information. Financial and operating statistics are collected under authority of the Board's Regulations.

The Board has under study the potential for and requirements of increased and improved air services into the Canadian North as well as the consolidation of its over-all regulations. The procedures governing applications for licence are being examined for improved processing methods.

The Board continues to take an active part in the work of the International Civil Aviation Organization and to undertake bilateral negotiations for the exchange of traffic rights when appropriate. At present, Trans-Canada Air Lines, Canadian Pacific Air Lines Limited and TransAir Limited are Canada's designated international scheduled carriers.

The Canadian Maritime Commission.—The Canadian Maritime Commission was established by Act of Parliament in 1947 (RSC 1952, c. 38) as a separate department of the Government reporting to Parliament through the Minister of Transport. It is the function of the Commission to "consider and recommend to the Minister from time to time such policies and measures as it considers necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing

industry commensurate with Canadian maritime needs". The Commission is authorized to examine into, ascertain and keep records of all phases of ship operation and to "administer, in accordance with regulations of the Governor in Council, any steamship subventions voted by Parliament".

In 1961 a national maritime policy was inaugurated to encourage the construction and operation of ships in Canada and, as well, provide assistance to Canadian fishermen. A federal capital subsidy was authorized, amounting to 35 p.c. of the cost of construction of self-propelled ships in Canadian shipyards, to be increased to 40 p.c. for work done after May 12, 1961 and under any contract entered into and filed with the Commission on or before Mar. 31, 1963. For steel fishing trawlers constructed to replace old vessels withdrawn from service, the assistance is 50 p.c. of the cost. Capital grants toward the construction of small wooden fishing vessels were also increased. Payments of capital subsidy are made under regulations of the Governor in Council; up to Mar. 31, 1963, about \$24,500,000 was expended under the regulations.

Subsidies have been paid by the Federal Government for the maintenance of essential steamship services since the latter part of the nineteenth century; the services subsidized and the amounts paid for the years ended Mar. 31, 1962 and 1963 are given on p. 804.

The National Energy Board.—The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The functions and operations of the Board are covered in the Domestic Trade and Prices Chapter of this volume (see Index).

PART II.—RAIL TRANSPORT*

Section 1.—Railways

Since Confederation the railways of Canada have been the principal transport facility throughout, and beyond, the nation. The two great transcontinental systems, supplemented by a major north-south line on the West Coast and a number of regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes. Although highway and air competition is increasing, the railways still retain their primary position in the freight transport field.

The two national railway companies control a wide variety of Canadian and international transport and communication services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. In addition, it operates a highway service, a fleet of coastal and ocean-going steamships, a national telecommunications system connecting the principal points of Canada with other parts of the world, an extensive express service in Canada and abroad, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European points. Its chief competitor, the Canadian Pacific Railway Company, is a joint-stock corporation

* Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division.

operating a transcontinental railway supported by a national telecommunications system with connections throughout the world, a large fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels, a domestic airline servicing points in British Columbia, Alberta and Yukon Territory, a transpacific airline service to the Orient and the Antipodes, air services to Mexico, Peru, Chile and Argentina, a transpolar air route connecting Vancouver and Amsterdam, a transatlantic service to Portugal, Spain and Italy, and a limited (one flight daily each way) transcontinental air service between Vancouver and Montreal. Also included in the company's operations are a world-wide express service and a domestic truck and bus network.

The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over a 789.5-mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with a branch line from Chetwynd to Dawson Creek. The completion in 1958 of the northern section of this line opened up to development the vast interior of the province and brought to an end the largest railway construction job undertaken in North America for two decades. With the completion in May 1959 of the last link in the microwave system, the PGE became the first railway on the Continent to be operated entirely by means of radio communication.

The statistics in Subsections 1 to 3 of this Section cover the combined railway facilities of all companies operating in Canada, including intercity freight and passenger services of electric railway companies. Details relating to the Canadian National Railway System are dealt with separately in Subsection 4. A special article covering the consolidation and organization of the CNR appears in the 1955 Year Book at pp. 840-847.

Subsection 1.—Milage and Equipment

Construction was begun in 1835 on the first railway in Canada—the short link of 14.5 miles between Laprairie and St. Johns, Que.—but only 66 miles were in operation by 1850. The first great period of construction was in the 1850's when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific railways contributed to another period of rapid expansion in the 1870's and 1880's. In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

There has been little change in total track mileage since the late 1920's, although in recent years the development of a number of large projects in districts far removed from transport facilities and the opening up of the Northwest Territories has necessitated the building of branch lines. Those completed up to 1956 are listed in the 1957-58 Year Book, p. 815, and those completed from that year to 1961 are mentioned in subsequent editions. During 1962, the first section of the 430-mile Great Slave Railway, being built by the CNR for the Federal Government, went into operation. By the end of October, track had reached Manning, Alta., a distance of 56 miles, and rail grain shipments began moving out of this northerly agricultural area. At year-end, 73.5 miles of track had been completed and clearing, grading, bridge and trestle work progressed on the remainder of the right-of-way. Also in Alberta, a 23-mile rail extension was constructed from Whitecourt to Windfall to carry sulphur shipments from the Windfall gas fields. Track-laying was two thirds completed on the 61-mile branch line to the Matagami Lake region in northern Quebec and construction was started on an eight-mile extension from Chisel Lake to a new mining development at Stall Lake in northern Manitoba. Preparatory work was undertaken for the construction of a 15-mile branch line from Nepisiguit Junction, near

Bathurst, N.B., to a zinc, lead and copper mining development, and a survey report was made on the possible construction of a 57-mile line between Matane and Ste. Anne des Monts in the Gaspé region of Quebec. The CPR completed a 16-mile branch line south from Bredenbury, Sask., to serve a new mineral development and the PGE began construction of a 100-mile extension in northern British Columbia, which will leave the existing main line about 35 miles north of Prince George; it is scheduled for completion in 1965.

While new construction has added considerably to first main track mileage placed in operation in the past few years, other lines have been abandoned because they have become unprofitable. Thus, new mileage is not reflected in the totals shown in Table 1.

1.—Railway Track Mileage Operated, 1900-61

NOTE.—Figures of total mileage of first main track operated for 1835-1909 are given in the 1941 Year Book, p. 546; for 1911-14 in the 1954 edition, p. 786; for 1916-24 in the 1955 edition, p. 830; and for 1926-49 in the 1956 edition, p. 792.

FIRST MAIN TRACK MILEAGE		TRACK MILEAGE BY AREA AND TYPE				
Year	Miles in Operation	Area and Type of Track	1958	1959	1960	1961
	No.		No.	No.	No.	No.
1900.....	17,657	First Main—				
1905.....	20,487	Newfoundland.....	934	934	934	933
1910.....	24,731	Prince Edward Island.....	285	285	284	279
1915.....	34,882	Nova Scotia.....	1,336	1,333	1,316	1,298
1920.....	38,805	New Brunswick.....	1,818	1,818	1,783	1,783
1925.....	40,350	Quebec.....	5,096	5,228	5,228	5,224
1930.....	42,047	Ontario.....	10,467	10,421	10,245	10,188
1935.....	42,916	Manitoba.....	5,004	5,004	5,056	4,954
1940.....	42,565	Saskatchewan.....	8,721	8,721	8,721	8,606
1945.....	42,352	Alberta.....	5,679	5,680	5,679	5,689
1950 ¹	42,979	British Columbia.....	4,388	4,388	4,386	4,338
1951.....	42,956	Yukon Territory.....	58	58	58	58
1952.....	42,953	United States.....	339	339	339	339
1953.....	43,163	Totals, First Main.....	44,125	44,209	44,029	43,689
1954.....	43,132					
1955.....	43,444	Second main.....	2,444	2,350	2,243	2,150
1956.....	43,652	Other main.....	—	—	45	48
1957.....	43,890	Industrial.....	1,216	1,219	1,248	1,262
1958.....	44,125	Yard and sidings.....	11,534	11,616	11,628	11,633
1959.....	44,209					
1960.....	44,029	Grand Totals.....	59,319 ²	59,394 ³	59,193 ³	58,782 ⁴
1961.....	43,689					

¹ Newfoundland included from 1950.

² Excludes 51 miles of joint track.

³ Excludes 52 miles of joint track.

⁴ Excludes 53 miles of joint track.

Rolling-Stock.—Although the figures of Table 2 show the number of the different types of rolling-stock in operation at Dec. 31 of the years 1955 to 1961, they do not by any means give a complete picture of rolling-stock capacity for service. Each year hundreds of units, particularly freight cars, are retired and replaced by more efficient equipment, much of it specially designed and engineered for specific hauling jobs. Improvement in the efficiency of car use is also a factor that may reduce the amount of equipment required. Between 1955 and 1961 the average capacity of box cars increased from 45.8 tons to 47.2 tons, of gondola cars from 64.4 tons to 65.5 tons, flat cars from 45.6 tons to 48.1 tons, hopper cars from 64.6 tons to 67.0 tons, ore cars from 63.3 tons to 79.4 tons and of all freight cars from 48.6 tons to 51.6 tons. The average tractive power of locomotives advanced during the same period from 42,701 lb. to 56,597 lb. Table 2 shows the increasing number of diesel locomotives in service. The Canadian National Railways

completed its dieselization program during 1960, retiring all remaining steam units from service, while the Canadian Pacific Railway Company at the close of 1961 had replaced all but 188 steam locomotives.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1955-61

Type	1955	1956	1957	1958	1959	1960	1961
	No.	No.	No.	No.	No.	No.	No.
Locomotives	4,714¹	4,790	4,821	4,823	4,720	3,752	3,547
Steam—							
Coal burning.....	2,521	2,228	1,857	1,483	1,143	335	144
Oil burning.....	704	621	537	477	371	68	53
Diesel electric.....	1,455	1,895 ¹	2,372	2,799	3,155	3,308	3,309
Electric.....	33	46	55	64	51	41	41
Passenger Cars	6,574	6,220²	5,942	5,733	5,456	5,119	4,737
Coach.....	2,058	1,799	1,597	1,486	1,409	1,342	1,237
Combination.....	325	340	343	328	182	172	152
Colonist.....	226	178	136	124	96	88	81
Dining.....	201	186	183	174	159	149	134
Parlour.....	172	173	167	162	143	137	127
Sleeping.....	969	925	879	900	919	861	804
Baggage, express and postal.....	2,433	2,404	2,398	2,336	2,353	2,218	2,061
Self-propelled.....	75	90	129	139	128	111	103
Other.....	115	112	110	84	67	41	38
Freight Cars	185,956	191,974³	197,907	196,893	194,512	191,553	186,387
Automobile.....	7,406	6,370	6,733	6,722	7,270	7,249	7,225
Ballast.....	2,378	2,156	2,646	2,708	3,140	3,128	3,113
Box.....	114,814	118,353	121,346	117,604	114,181	111,217	108,239
Flat.....	12,037	11,876	11,975	12,058	12,270	12,645	12,164
Gondola.....	18,592	19,052	19,904	20,522	20,428	20,310	20,168
Hopper.....	12,247	12,870	13,788	15,493	15,601	15,578	15,571
Ore.....	2,559	5,465	5,967	6,004	5,964	5,930	5,892
Refrigerator.....	9,735	9,906	10,022	10,184	10,155	10,076	8,635
Stock.....	5,776	5,501	5,141	5,195	5,025	4,917	4,589
Tank.....	378	389	384	382	455	472	479
Other.....	34	16	1	21	23	31	312
Privately Owned Cars	—	—	—	—	4,853	5,031	5,072
Flat.....	—	—	—	—	7	7	7
Gondola.....	—	—	—	—	—	2	2
Hopper.....	—	—	—	—	37	23	23
Tank.....	—	—	—	—	4,809	4,999	5,035
Refrigerator.....	—	—	—	—	—	—	5

¹ Includes one gasoline locomotive. ² Includes 13 cars not specified as to type. ³ Includes 20 cars not specified as to type. ⁴ Includes those of non-rail industrial firms such as oil, chemical and railway car leasing companies which furnish freight cars to, or on behalf of, any railway line.

Subsection 2.—Finances

The tables in this Subsection give information on capital liability and capital investment, earnings, operating expenses, employees and their earnings and government aid to all railways.* Financial statistics of government-owned railways are given separately and in detail in Subsection 4. A Uniform Classification of Accounts for common carriers became effective for the Canadian National and the Canadian Pacific Railways on Jan. 1, 1956, and for all other common carrier railways on Jan. 1, 1957. In transportation statistics a distinction is made between expenditures and expenses. In this Subsection, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

* Statistics for individual railways are given in DBS annual report *Railway Transport*, published in six parts (Catalogue Nos. 52-207—52-212).

Capital Liability and Investment.—The capital liability of railways operating in Canada for the years 1942 to 1961 is shown in Table 3. The increase of \$12,455,158 in 1961 over 1960 compares with an increase in investment in road and equipment property of \$85,684,597 as shown in Table 4.

3.—Capital Liability of Railways, 1942-61

NOTE.—Figures for 1876-1925 are given in the 1927-28 Year Book, p. 649, and those for 1926-61 in the 1947 edition, p. 662.

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total	Year	Stocks	Funded Debt	Total
\$	\$	\$	\$	\$	\$	\$	\$
1942.....	1,578,254,765	1,793,579,270	3,371,834,035	1952 ¹	2,406,309,060	1,308,890,612	3,715,208,672 ¹
1943.....	1,614,936,131	1,741,664,036	3,356,600,167	1953.....	2,422,692,856	1,439,063,402	3,861,756,258 ¹
1944.....	1,636,064,822	1,707,801,676	3,343,866,498	1954.....	2,499,778,848	1,475,815,267	3,975,594,115 ¹
1945.....	1,631,973,055	1,701,786,899	3,333,759,954	1955.....	2,543,465,586	1,565,109,030	4,108,574,616 ¹
1946.....	1,624,753,709	1,665,844,138	3,290,597,847	1956.....	2,572,487,313	1,612,706,551	4,185,193,864 ¹
1947.....	1,623,607,219	1,685,010,672	3,308,617,891	1957.....	2,565,559,683	1,764,660,210	4,330,219,893 ¹
1948.....	1,578,057,474	1,672,282,030	3,250,339,504	1958.....	2,646,659,697	1,953,114,826	4,599,774,523 ¹
1949.....	1,576,734,292	1,692,898,968	3,269,633,260 ¹	1959.....	2,669,062,269	2,122,675,213	4,791,737,482 ¹
1950.....	1,649,462,088	1,826,346,222	3,475,808,310 ¹	1960.....	2,725,827,634	2,244,571,812	4,970,399,496 ¹
1951.....	1,646,205,772	1,925,488,160	3,571,693,932 ¹	1961.....	2,748,537,919	2,234,316,735	4,982,854,654 ¹

¹ Exclusive of approximately \$40,000,000 railway debt in Newfoundland assumed in 1949.

² Affected

by readjustment in the capital structure of the CNR (see p. 763).

4.—Capital Invested in Railway Road and Equipment Property, 1957-61

Investment	1957	1958	1959	1960	1961
\$	\$	\$	\$	\$	\$
Road.....	226,971,459	174,390,869	134,823,880	113,587,736	72,244,687
Equipment.....	189,383,255	133,068,199	78,487,442	Cr. 12,920,826	Cr. 30,683,878
General.....	Cr. 77,635,769	Cr. 1,673,544	Cr. 816,428	Cr. 35,546	3,152,244
Undistributed.....	10,761,171	2,253,817	42,668,998	6,742,707	40,971,544
CNR non-rail property....	6,578,570	6,017,011	1,861,030	6,538,741	15,506,157
CPR " "	9,943,881	Cr. 3,825,030	36,878,761	122,830	26,492,758
Other " "	243,720	61,836	3,929,207	81,136	Cr. 27,866
Totals.....	355,480,116	308,039,341	255,163,892	107,374,071	85,684,597
Cumulative Investment to Dec. 31.....	6,074,129,038 ¹	6,382,168,379	6,637,332,271	6,744,706,342	6,830,390,939

¹ Includes investments totalling \$11,188,835 of the British Columbia Electric Railway which in 1957 reported for the first time in the railway transport series.

Revenues and Expenses.—The ratio of operating expenses to revenues of railways operating in Canada was 96.36 p.c. in 1961 compared with 90.19 p.c. in 1952; the high for the period 1952-61 was 97.30 p.c. recorded in 1958. Operating revenues, which reached an all-time high in 1956, declined 1.3 p.c. over the ten years. Operating expenses, on the other hand, increased 5.4 p.c. during the same period. Because outlay increased more rapidly than income, the net operating revenue per mile of line dropped from \$2,675 in 1952 to \$936 in 1961, although the lowest figure during the period was recorded in 1958 at \$696.

5.—Operating Revenues and Expenses of Railways, 1952-61

NOTE.—Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight- Train Revenue per Freight- Train Mile	Passenger- Train Revenue per Passenger- Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	\$	\$	p.c.	\$	\$	\$	\$	\$
1952.....	1,172,158,665	1,057,186,304 ¹	90.19	27,272	24,597	2,675	10.56	3.50
1953.....	1,205,935,414	1,100,393,836 ¹	91.25	28,020	25,567	2,453	11.43	3.53
1954.....	1,095,440,918	1,019,534,989 ¹	93.07	25,402	23,642	1,760	11.58	3.44
1955.....	1,198,351,601	1,048,564,681 ¹	87.50	26,876	23,517	3,359	12.21	3.60
1956.....	1,300,623,923	1,171,338,574	90.06	29,047	26,159	2,888	12.75	3.16
1957.....	1,263,147,930	1,203,530,146	95.28	28,171	26,841	1,330	13.85	3.30
1958.....	1,163,735,417	1,132,277,504	97.30	25,766	25,070	696	14.51	3.11
1959.....	1,224,567,928	1,166,306,724	95.24	27,093	25,804	1,289	15.48	3.29
1960.....	1,151,655,456	1,109,470,426	96.34	25,544	24,608	936	15.54	3.46
1961.....	1,156,480,700	1,114,432,525	96.36	25,736	24,800	936	16.72	3.32

¹ Excludes equipment rents, joint facility rents and tax accruals.

6.—Distribution of Operating Expenses of Railways, 1959-61

Item	1959		1960		1961	
	\$	p.c.	\$	p.c.	\$	p.c.
Road maintenance.....	259,958,839	22.3	243,990,846	22.0	243,445,087	21.9
Equipment maintenance.....	256,778,520	22.0	249,473,225	22.5	249,354,157	22.4
Traffic.....	29,140,473	2.5	28,866,434	2.6	29,027,607	2.6
Transportation.....	443,292,012	38.0	424,924,203	38.3	423,367,291	38.0
General and miscellaneous.....	113,955,685	9.8	103,370,511	9.3	108,555,373	9.7
Rents and taxes.....	63,181,195	5.4	58,845,207	5.3	60,683,010	5.4
Totals.....	1,166,306,724	100.0	1,109,470,426	100.0	1,114,432,525	100.0

Employment and Salaries and Wages.—Railway employment in 1961 declined 5 p.c. from employment in the previous year, 23 p.c. from that in 1956 and was 16 p.c. lower than the average for the ten-year period 1952-61. Compared with 1952, employees on hourly rates in 1961 worked 0.4 p.c. fewer average hours but their average wages per hour were 7 p.c. higher. Since 1956, statistics have been reported in accordance with the revised Canadian Classification of Railway Employees and Their Compensation, which became effective Jan. 1, 1956.

7.—Railway Employees and Their Earnings, 1952-61

NOTE.—Figures include employees and wages for 'outside' operations amounting to from 3 to 6 p.c. of total employees and from 2 to 5 p.c. of total salaries and wages. Figures for 1912-39 are given in the 1941 Year Book, p. 551; for 1940-49 in the 1951 edition, p. 723; and for 1950 and 1951 in the 1961 edition, p. 785.

Year	Employees	Total Salaries and Wages	Average Salaries and Wages	Ratio of Total Payroll (charged to operating expenses) to—	
				Operating Revenues	Operating Expenses
	No.	\$	\$	p.c.	p.c.
1952.....	214,143	669,457,962	3,126	52.1	57.7
1953.....	211,951	724,077,594	3,416	53.4	58.6
1954.....	196,307	661,829,774	3,371	54.3	58.3
1955.....	195,459	674,875,767	3,453	50.2	57.4
1956.....	215,324 ¹	780,135,918	3,623	50.6	55.9
1957.....	212,426 ¹	791,529,117	3,726	51.4	53.9
1958.....	192,809 ¹	757,907,896	3,931	52.7	54.3
1959.....	187,981 ¹	780,031,534	4,150	51.5	54.2
1960.....	175,537 ¹	740,475,804	4,218	52.0	54.2
1961.....	166,081	748,097,831	4,504	52.7	54.9

¹ Includes employees engaged in cartage and highway transport (rail) operations.

Government Aid to Railways.—In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues were given in a later period and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government.

During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure through funds raised by the issue of new bonds with Federal Government guarantee. Bonds guaranteed by the Governments of New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have been eliminated in this manner in recent years. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1961 amounted to \$1,670,653,176; this amount includes \$88,972 perpetual debenture stock and guaranteed stock of the former Grand Trunk Railway, now part of the Canadian National Railway System, on which interest and dividends are guaranteed by the Federal Government.

Subsection 3.—Passenger and Freight Traffic

Tables 8 and 9 show passenger and freight statistics for all railways for the years 1957-61. A separate analysis of the operations and traffic of the Canadian National Railways is given at pp. 763-766.

8.—Statistics of Passenger Service and Revenue, 1957-61

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books.

Item	1957	1958	1959	1960	1961
Revenue passenger-train miles ¹ '000	41,630	40,546	38,212	34,493	31,131
Passenger-train car miles ¹ "	409,175	382,341	367,551	344,996	311,912
Passengers carried ² "	22,966	21,376	20,940	19,497	18,784
Passenger-miles..... "	2,925,133	2,485,861	2,445,654	2,263,795	1,960,591
Passenger-miles per mile of line..... No.	65,236	55,040	54,109	50,212	43,631
Average receipts per passenger-mile..... cts.	2.97	3.11	3.01	3.05	3.12
Average receipts per passenger..... \$	3.78	3.62	3.51	3.55	3.26
Average passenger journey..... miles	127	116	117	116	104
Average passengers per train..... No.	70	61	64	66	63
Passenger-train revenue per passenger-train mile..... \$	3.30	3.11	3.29	3.46	3.32

¹ Includes express, baggage, mail and other cars.² Duplications included.**9.—Statistics of Freight Service and Revenue, 1957-61**

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books.

Item	1957	1958	1959	1960	1961
Revenue freight-train miles..... '000	77,992	68,656	68,351	63,887	60,593
Revenue freight-train car miles ¹ "	3,540,096	3,324,508	3,322,167	3,249,824	3,234,586
Freight carried ² '000 tons	174,163	153,525	166,186	158,466	153,202
Freight ton-miles..... '000	71,047,229	66,356,829	67,956,540	65,444,784	65,828,403
Freight ton-miles per mile of line..... "	1,584	1,469	1,503	1,451	1,464
Freight receipts per ton per mile..... cts.	1.52	1.50	1.56	1.52	1.54
Receipts per ton hauled..... \$	6.21	6.49	6.37	6.26	6.62
Average length of freight haul..... miles	408	432	409	413	430
Average train load, revenue tons..... No.	911	967	994	1,024	1,086
Average load per loaded car mile..... tons	32.86	32.35	33.31	33.11	33.79
Revenue per freight-train mile..... \$	13.85	14.51	15.48	15.54	16.72

¹ Includes caboose miles but excludes miles made in passenger and non-revenue trains.² Excludes traffic handled by more than one railway; see Table 10 for details of freight carried.

The total tonnage of revenue freight carried (including national loadings and receipts from United States rail connections) was 3.4 p.c. lower in 1961 than in 1960. Among the main commodity groups, only agricultural products increased over the previous year. Of the 153,080,317 tons carried in 1961 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 40.1 p.c., manufactures and miscellaneous products for 30.3 p.c., agricultural products 18.3 p.c., forest products 9.5 p.c., animal products 1.1 p.c., and less-than-carload freight for 0.8 p.c.

10.—Commodities Hauled as Freight by Railways, 1958-61

NOTE.—In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways.

Commodity	1958	1959	1960	1961
	tons	tons	tons	tons
Agricultural Products	29,309,235	27,988,690	26,666,459	28,012,441
Wheat.....	14,553,875	13,794,365	13,293,302	15,155,289
Oats.....	1,490,516	1,372,154	1,186,626	982,668
Other grain.....	5,181,033	4,906,172	4,292,962	4,308,532
Flour, wheat.....	1,629,846	1,689,048	1,639,965	1,480,964
Other mill products.....	1,887,424	1,708,274	1,659,275	1,697,726
Other agricultural products.....	4,566,541	4,518,677	4,594,329	4,387,262
Animal Products	1,634,878	1,571,388	1,695,451	1,619,212
Livestock.....	605,105	507,389	430,234	442,932
Meats and other edible packing-house products....	506,288	550,999	781,520	643,429
Other animal products.....	523,485	513,000	483,697	532,851
Mine Products	59,895,924	71,178,434	65,541,195	61,388,644
Coal, anthracite.....	1,615,401	1,555,774	1,378,104	1,148,868
Coal, bituminous, subbituminous, lignite.....	12,854,100	11,949,461	11,259,474	10,461,389
Coke.....	1,585,402	1,581,553	1,582,395	1,571,791
Ores and concentrates.....	21,287,157	30,840,791	28,386,836	26,287,337
Sand and gravel.....	6,997,118	6,442,813	6,308,623	5,793,376
Stone (crushed, ground, broken).....	7,017,430	6,694,809	5,952,700	5,237,255
Other mine products.....	8,539,316	12,113,233	10,673,063	10,888,628
Forest Products	14,556,917	14,736,118	14,960,197	14,491,704
Logs, posts, poles, piling and ties.....	1,946,490	2,105,792	2,592,553	2,127,041
Cordwood and other firewood.....	31,007	27,651	16,077	11,595
Pulpwood.....	4,731,075	4,121,433	4,794,373	4,574,296
Lumber, timber, box, crate and cooperage material.	6,802,421	7,282,234	6,411,739	6,443,645
Other forest products.....	1,045,924	1,198,958	1,145,455	1,335,127
Manufactures and Miscellaneous	46,534,971	49,162,943	48,285,917	46,378,066
Gasoline and petroleum products.....	8,402,525	8,325,030	7,851,365	6,887,884
Iron and steel (bar, sheet, structural, pipe).....	3,672,395	4,234,303	3,986,862	3,637,000
Automobiles, trucks and parts.....	1,518,229	1,809,106	1,993,474	1,673,124
Newsprint.....	4,115,818	4,256,951	4,236,852	4,397,864
Wood pulp.....	2,312,458	2,547,531	2,518,188	2,688,225
Other manufactures and miscellaneous.....	26,513,546	27,990,022	27,694,176	27,093,969
Less-than-Carload Lots	1,509,831	1,457,576	1,312,915	1,190,250
Grand Totals	153,441,756	166,095,149	158,462,134	153,080,317

Railway Accidents.—Accidents shown in Table 11 include all those in which railway trains were involved and accidents on railway property. The classification of accidents used for DBS vital statistics treats collisions between motor vehicles and trains as motor vehicle accidents; provincial statistics also class them as motor vehicle accidents and consequently adjustments should be made when compiling total accidental deaths of all kinds or comparing results of accidents of different kinds, such as train and motor vehicle. Also, all passengers injured are included in the figures but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded.

11.—Persons Killed or Injured on Railways, by Specified Cause, 1959-61

Class of Person and Description of Accident	1959		1960		1961	
	Killed	Injured	Killed	Injured	Killed	Injured
ACCIDENTS RESULTING FROM MOVEMENT OF TRAINS, LOCOMOTIVES OR CARS						
Class of Person—	No.	No.	No.	No.	No.	No.
Passengers.....	9	151	2	151	1	73
Employees.....	30	1,092	24	895	22	881
Trespassers.....	65	56	52	63	46	67
Non-trespassers.....	196	505	183	463	159	419
Postal clerks, expressmen, etc.....	3	14	1	14	—	11
Totals.....	303	1,818	262	1,586	228	1,451
Description of Accidents (Employees and Passengers only)—						
Coupling and uncoupling.....	—	50	—	47	2	55
Collisions.....	15	188	6	182	4	87
Derailments.....	4	44	4	34	—	19
Locomotives or cars breaking down.....	—	18	—	8	—	2
Falling from trains or cars.....	2	80	4	52	1	46
Getting on or off trains.....	1	247	2	207	2	245
Struck by trains, etc.....	11	17	3	9	6	9
Overhead and other obstruction.....	3	26	—	19	—	14
Other causes.....	3	573	7	488	8	477
Totals.....	39	1,243	26	1,046	23	954
ALL OTHER ACCIDENTS						
Class of Person—	No.	No.	No.	No.	No.	No.
Stationmen.....	—	239	1	215	3	320
Shopmen.....	3	739	1	545	7	590
Trackmen.....	8	760	5	668	7	693
Other employees.....	1	426	2	360	1	336
Passengers.....	—	42	—	64	—	55
Others.....	1	52	1	53	3	59
Totals.....	13	2,258	10	1,905	21	2,053

Subsection 4.—The Canadian National Railway System*

In view of the interest in Canada's publicly owned railway, the Canadian National Railway System is given separate treatment in this Subsection. Its history is presented in a special article published in the 1955 Year Book at pp. 840-847. More detailed information than can be given here is obtainable from DBS annual report *Canadian National Railways* (Catalogue No. 52-201).

Financial Statistics.—The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest debt undertaken by the company on its formation in 1923 are described in the special article mentioned above. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid interest on loans, and certain loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also, for a term of ten years ended Dec. 31, 1961, the Railway was not obliged to pay interest on

* The Hudson Bay Railway, formerly managed and operated for the Federal Government by the CNR, was absorbed into the Canadian National Railway System on Jan. 1, 1953, to be operated in the same manner as other Canadian Government railway lines. Statistics of the Hudson Bay Railway are therefore included with CNR data for 1958 and subsequent years.

\$100,000,000 of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced.

12.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1953-62

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Total
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	\$	\$	\$	\$	\$	\$
1953.....	1,552,050,067	4,514,490	513,977,391	75,834,299	342,140,048	2,488,516,295
1954.....	1,571,393,181	4,514,490	910,422,885	62,546,711	126,771,981	2,675,649,248
1955.....	1,591,902,624	4,511,150	861,870,899	34,493,192	199,444,622	2,692,222,487
1956.....	1,616,270,966	4,508,670	794,482,906	25,086,606	353,664,828	2,794,013,976
1957.....	1,689,451,306	4,505,870	730,346,711	17,978,788	623,967,851	3,016,250,526
1958.....	1,704,387,845	4,504,203	1,024,710,205	9,098,765	484,791,699	3,227,492,717
1959.....	1,723,909,722	4,503,549	1,335,510,205	5,548,765	345,684,052	3,415,156,293
1960.....	1,721,143,162	4,499,284	1,677,209,478	3,098,765	148,021,700	3,553,972,389
1961.....	1,744,673,266	4,499,273	1,670,653,176	2,423,765	164,593,150	3,586,842,630
1962.....	1,767,976,925	4,499,261	1,630,895,308	2,423,765	209,026,793	3,614,822,052

In Table 13 the assets of the Canadian National Railway System as at Dec. 31, 1961 and 1962 are compared with those at the time of consolidation of the system.

13.—Assets of the Canadian National Railway System as at Dec. 31, 1922, 1961 and 1962

Account	Dec. 31, 1922	Dec. 31, 1961	Dec. 31, 1962	Increase or Decrease 1922 to 1962
	\$	\$	\$	\$
Current Assets.....	87,580,218	202,821,146	225,004,113	137,423,895
Cash.....	14,651,422	25,025,136	50,063,093	35,411,671
Special deposits.....	6,139,435	48,209	44,294	-6,095,141
Traffic accounts receivable.....	2,528,622	5,256,580	4,215,344	1,686,722
Agent and conductor balances.....	5,386,673	32,292,563	34,568,900	29,182,227
Other accounts receivable.....	16,981,289 ¹	29,804,560	37,636,727	20,655,438
Government of Canada due on deficit account.....	—	18,607,772	9,335,454	9,335,454
Material and supplies.....	41,408,999	74,609,162	70,424,977	29,015,978
Interest and dividends receivable.....	377,003	3,226,234	3,741,449	3,364,446
Other current assets.....	106,775	13,950,930	14,973,875	14,867,100
Investments.....	1,842,428,131	4,138,654,068	4,212,610,502	2,370,182,371
Road and equipment property.....	1,765,323,644	3,735,663,809	3,784,798,314	2,019,472,670
Improvements on leased property.....	1,492,123	1,325,971	1,369,336	122,737
Acquisition adjustment—U.S. lines.....	—	Cr. 3,776,424	—	—
Non-rail property.....	34,767,914	121,164,443	131,678,351	96,910,437
Capital and other reserve funds.....	6,171,808	534	743,812	-6,171,808
Investments in affiliated companies.....	24,253,323	281,269,266	291,162,893	266,909,570
Other investments.....	10,419,319	3,006,469	3,603,608	-6,815,711
Deferred Assets.....	12,325,297	43,811,771	43,611,559	31,286,262
Working fund advances.....	166,847	792,187	743,812	576,965
Insurance and other funds.....	352,488	15,000,000	15,000,000	14,647,512
Other deferred assets.....	11,805,962	28,049,584	27,867,747	16,061,785
Unadjusted Debits.....	15,697,557	39,422,256	38,174,686	22,477,129
Prepayments.....	322,059	2,551,208	2,508,520	2,186,461
Discount on funded debt.....	1,919,635	24,236,133	21,665,337	19,745,702
Other unadjusted debits.....	13,455,863	12,634,915	14,000,829	544,966
Grand Totals.....	1,958,031,203	4,424,739,241	4,519,400,860	2,561,369,657

¹ Includes "loans and bills receivable" and "rents receivable".

The financial details presented in Table 14 are those of the entire Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications throughout, and high-way transport (rail) operations from 1956. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents have been charged to operating expenses since Jan. 1, 1956.

14.—Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System (Canadian and United States Operations), 1953-62

NOTE.—Figures for 1911-52 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit ¹	Cash Deficit or Surplus ²
	\$	\$	\$	\$	\$	\$
1953.....	696,622,451	659,049,086	29,238,623	29,376,160	Dr. 137,537	Cr. 244,017 ³
1954.....	640,637,280	626,465,374	7,574,821	32,527,264	" 24,952,443	Dr. 28,758,098
1955.....	683,088,794	629,013,125	43,478,955	33,004,300	Cr. 10,474,655	Cr. 10,717,689 ³
1956.....	774,800,647	728,008,837	57,623,710	31,782,991	" 25,840,719	" 26,076,951 ³
1957.....	753,165,964	755,214,378	6,913,660	36,971,680	Dr. 30,058,020	Dr. 29,572,541
1958.....	704,947,410	719,211,865	Dr. 4,779,895	46,521,236	" 51,301,131	" 51,591,424
1959.....	740,165,041	741,852,260	8,416,237 ⁺	52,918,886 ⁺	" 44,502,649 ⁺	" 43,588,290
1960.....	693,141,106	705,818,310	1,504,828 ⁺	69,469,961 ⁺	" 67,965,133 ⁺	" 67,496,777
1961.....	710,305,173	722,147,583	5,539,970 ⁺	73,404,523 ⁺	" 67,864,553 ⁺	" 67,307,772
1962.....	738,324,754	738,882,680	23,308,683	74,443,482	" 51,134,799	" 48,919,454

¹ Includes appropriations for insurance fund.

² Contributed by or paid to the Government of Canada.

³ Paid to the Government of Canada as a dividend on 4-p.c. preferred stock.

Milage and Traffic.—At Dec. 31, 1962, first main track milage owned by the Canadian National Railways (including electric lines and lines in the United States but excluding lines of the Northern Alberta Railways and Toronto Terminals Railway controlled jointly by the Canadian National and the Canadian Pacific Railways) was 24,409 miles.

15.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1959-62

NOTE.—Includes electric lines.

Milage	1959	1960	1961	1962
Train Milage.....miles	62,556,301	57,525,935	55,180,447	54,014,281
Passenger service....."	22,394,255	21,292,408	19,576,875	18,096,980
Freight service....."	37,754,181	34,379,411	34,041,907	34,283,043
Work service....."	2,407,865	1,854,116	1,561,665	1,634,258
Passenger-Train Car Milage.....miles	217,727,131	211,939,049	199,177,610	188,256,798
Coaches and combination (excl. work service)....."	51,682,574	49,618,353	45,084,676	42,510,131
Motor unit cars....."	4,153,329	3,913,225	3,782,495	3,806,184
Parlour, sleeping and dining cars....."	59,225,517	57,198,952	51,081,594	48,550,070
Baggage, mail, express, etc....."	102,665,711	101,208,519	99,228,845	93,390,413

15.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1959-62—concluded

Milage and Traffic	1959	1960	1961	1962
Freight-Train Car Milage..... miles	1,851,192,256	1,774,972,100	1,795,163,443	1,827,405,682
Loaded freight..... "	1,171,769,671	1,099,465,199	1,095,441,528	1,111,533,850
Empty freight..... "	641,624,285	640,812,172	665,300,974	680,796,324
Caboose..... "	37,798,300	34,694,729	34,420,941	35,075,508
Work-Train Car Milage..... miles	5,042,176	4,391,784	3,302,287	2,804,515
Passenger Traffic—				
Passengers carried (earning revenue) No.	12,693,777	13,307,901	12,104,791	12,342,782
Passengers carried (earning revenue) one mile..... "	1,272,152,625	1,208,382,297	1,075,770,694	1,129,315,233
Passenger-miles per mile of road..... "	51,115	48,443	43,283	45,623
Average passenger journey..... miles	100.2	100.0	88.9	91.5
Average amount received per passenger \$	3.17	3.19	2.87	2.78
Average amount received per passenger-mile..... \$	0.03159	0.03171	0.03234	0.03040
Freight Traffic—				
Revenue freight carried..... tons	82,202,096	77,688,926	76,022,886	78,384,773
Revenue freight carried one mile.....	35,542,136,785	34,011,491,932	34,723,214,717	35,595,425,349
Revenue freight carried one mile per mile of road..... "	1,423,304	1,358,680	1,397,069	1,438,003
Total (all classes) freight carried one mile per mile of road..... "	1,473,014	1,400,758	1,419,496	1,458,828
Average hauls, revenue freight..... miles	433.2	437.8	456.7	454.1
Gross ton miles per freight train hour. No.	42,937	46,628	50,172	52,085
Freight revenue per ton..... \$	6.99	6.77	6.76	6.75
Freight revenue per ton-mile..... \$	0.01613	0.01547	0.01480	0.01487

Section 2.—Express Companies

Express, which is actually expedited freight carried on passenger trains, is a service provided by rail carriers either through a separate express company or as a department of the railway organization. Many express and package freight shipments are handled on a contract basis—contracts which provide for payment to the railways of a fixed percentage of the gross express revenue.

Express companies are organized under authority of federal legislation and their business concerns the rapid transit of valuable or perishable commodities and animals, the delivery of parcels and the issuing of financial papers, money orders, travellers cheques and letters of credit. Express rates are usually much higher than freight rates and the two services are not normally competitive. Both tariffs are subject to the approval of the Board of Transport Commissioners.

Five express organizations operate in Canada—four Canadian and one American. The Canadian Pacific Express Company is a subsidiary of the Canadian Pacific Railway Company and handles the express business on the railways and the inland and ocean steamship lines of the parent company. The express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System, and the Northern Alberta Railways is handled by departments of the respective railways. The Railway Express Agency Incorporated, of the United States, operates mainly over the Canadian sections of United States railways and over the route from Skagway in Alaska to points in Yukon Territory. Operations of the Algoma Central and Hudson Bay Railway express department were reported for the first time in 1957. No statistics are available on the volume of express traffic because much of it consists of parcels and small lots that cannot be classified.

16.—Summary Statistics of Express Companies, 1953-62

NOTE.—Figures for 1911-52 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

Year or Company	Milages Operated in Canada ¹	Gross Earnings	Operating Expenses ²	Express Privileges ³	Net Operating Revenue
	No.	\$	\$	\$	\$
1953.....	55,805	74,296,948	49,569,842	23,584,806	1,142,300
1954.....	68,373	70,039,054	48,167,243	20,753,503	1,118,308
1955.....	65,916	73,434,962	48,726,272	23,533,770	1,174,920
1956.....	67,984	88,012,718	60,180,066	27,114,672	717,980
1957.....	65,516	85,630,963	61,385,390	23,870,836	374,737
1958.....	65,982	86,558,161	62,120,291	23,797,450	640,420
1959.....	67,523	88,834,704	63,194,957	25,061,221	578,526
1960.....	62,154	84,986,847	61,123,030	23,242,445	621,372
1961.....	65,523	81,098,805	62,674,794	17,875,713	548,298
1962.....	70,985	88,877,337	64,086,906	19,041,953	748,478
1962					
Algoma Central and Hudson Bay Rly..	322	71,712	51,793	22,800	Dr. 2,881
Canadian National Express.....	51,049	46,899,233	36,154,552	10,184,626	560,055
Canadian Pacific Express.....	17,312	31,268,570	23,680,952	7,440,918	146,700
Northern Alberta Railways.....	928	353,694	189,159	164,535	—
Railway Express Agency, Inc. (U.S.A.)	1,373	5,284,128	4,010,450	1,229,074	44,604

¹ Over railways, boat lines, motor carrier and aircraft routes.

² Includes tax accruals from 1956 in accordance with the Uniform Classification of Accounts adopted Jan. 1, 1956.

³ Amounts paid by express companies to the carriers, i.e., railways, steamship lines, etc., for transporting express matter.

17.—Business Transacted by Express Companies in Financial Paper, 1958-62

Item	1958	1959	1960	1961	1962
	\$	\$	\$	\$	\$
Money orders, domestic and foreign....	133,303,403	126,470,170	118,271,143	111,935,109	108,785,993
Travellers cheques, domestic and foreign.....	9,096,103	9,288,616	9,707,598	10,207,331	10,256,125
C.O.D. cheques.....	20,117,337	19,134,412	17,971,578	18,368,010	18,373,532
Telegraphic transfers.....	129,420	142,728	79,631	9,396	18,684
Totals.....	162,646,263	155,035,926	146,029,950	140,519,846	137,434,334

18.—Employees, Salaries and Wages and Commissions of Express Companies, 1953-62

Year	Employees ¹	Salaries and Wages ¹	Com- missions Paid	Year	Employees ¹	Salaries and Wages ¹	Com- missions Paid
	No.	\$	\$		No.	\$	\$
1953.....	12,119	37,413,060	2,795,766	1958.....	11,507	42,460,212	2,963,996
1954.....	11,450	35,882,288	2,691,440	1959.....	11,411	42,673,976	2,985,627
1955.....	11,593	36,200,739	2,745,259	1960.....	10,733	40,206,239	2,736,817
1956.....	12,448	40,981,769	3,044,285	1961.....	10,454	42,408,663	2,733,174
1957.....	12,133	42,172,398	2,930,514	1962.....	9,431	40,046,861	2,558,148

¹ Full-time employees only for 1953 and all employees, including part-time, for 1954-62.

PART III.—ROAD TRANSPORT*

Highways and motor vehicles are herein treated as related features of transportation. An introductory Section summarizes provincial regulations regarding motor vehicles and motor traffic.

Section 1.—Provincial Motor Vehicle and Traffic Regulations

NOTE.—It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at p. 770.

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized as follows.

Operators' Licences.—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests and renewable annually, except in Alberta and British Columbia where it is renewable every five years, and in New Brunswick and Manitoba where it is renewable every two years. Special licences are required for chauffeurs in all provinces except Newfoundland and in some jurisdictions special licences may be granted to those who have not reached the specified age.

Motor Vehicle Regulations.—In general, all motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the back of the vehicle (one only for the back of trailers), with the exception that Alberta does not require the licensing of trailers used for personal purposes. In most provinces, in event of sale the registration plates stay with the vehicle but in Quebec, Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exception from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is 90 days and in British Columbia and Ontario where it is six months) in any year to visitors' private vehicles registered in another province or a state that grants reciprocal treatment. Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device.

Traffic Regulations.—In all provinces and territories, vehicles keep to the right hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, Quebec and New Brunswick is 60 miles an hour in daytime and 55 at night; in Manitoba and Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highways in Alberta where maximum speeds are 65 in daytime and 55 at night. In Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour except where 65 miles an hour is authorized. In Ontario maximum speeds vary from 50 to 60 miles an hour, depending on type of highway. In the other provinces the maximum speed permitted is normally 50 miles an hour. Slower speeds are always required in cities, towns and villages, when passing schools and public playgrounds, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In almost all provinces, truck speed limits are at least five miles an hour below automobile speed limits. In all provinces and territories, accidents resulting in personal injury or property damage

* Except as otherwise indicated, the material in this Part has been revised in the Transportation Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

of \$100 or more must be reported to a police officer (in Quebec to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Driver Licensing Controls.—All provinces impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of the car, or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

Safety Responsibility Legislation.—Each province has enacted legislation under this heading (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle permit of a person convicted of a serious offence (impaired driving, driving under suspension, etc.) or a person involved directly or indirectly in an accident who is not covered for third-party insurance at the time of the accident. The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed. In Quebec, Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon Territory, uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of \$100 (\$200 in Saskatchewan and \$250 in British Columbia).

Although safety responsibility legislation has not been enacted in the Northwest Territories, the Motor Vehicle Ordinance requires the owner of a motor vehicle to submit evidence of stipulated insurance coverage on such vehicle before he can obtain registration. In the Yukon Territory, proof of insurance must be supplied before vehicle licence is issued. When the insurance expires or is cancelled, vehicle licence plates must be returned to the Registrar of Motor Vehicles.

Unsatisfied Judgment Fund.—Legislation has been enacted in all provinces except Saskatchewan and in the territories, usually in the form of an amendment to the motor vehicle laws of the province or territory, providing for the establishment of a fund, frequently called an Unsatisfied Judgment Fund, out of which are paid judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan where insurance is compulsory, the funds are obtained by the annual collection of a fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued. The fee does not exceed \$1 per annum except that Ontario collects \$20 from each uninsured owner of a motor vehicle at the time of registration or transfer. A feature of this legislation, which is contained in some provincial statutes, is the provision for the payment of judgments in 'hit-and-run' accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland); any judgment secured against the responsible authority is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one judgment. In Newfoundland and Nova Scotia, the limits are \$10,000 for one person, \$20,000 for two or more persons injured in one accident and \$5,000 for property damage. In Alberta and British Columbia, the limit is based on the single amount of \$25,000 and \$35,000, respectively, for any one accident with the proviso that not more than \$5,000 may be paid on a property damage claim until injury claims up to \$20,000 and \$30,000, respectively, have been satisfied; the \$30,000 limit exists in British Columbia for hit-and-run accidents but does not apply to payments for property damage. In Ontario, the limits are \$35,000 for death or personal injury to two or more persons and \$5,000 for damage to property, subject to a limit of \$35,000 in any one accident. In Manitoba, effective July 1, 1963, the limit based on one accident is \$35,000 for claims for injury or

property damage with the stipulation that not more than \$5,000 may be allocated to property damage until injury claims up to \$30,000 have been satisfied; the increased amount will apply in hit-and-run accidents occurring after July 1, 1963 but will be limited to personal injury only. In other provinces, lower limits of \$5,000, \$10,000 and \$1,000 are retained. For hit-and-run accidents payments are made for personal injuries only.

Sources of information on provincial motor vehicle and traffic regulations:—

Newfoundland

Administration.—The Minister of Finance, St. John's.

Legislation.—The Highway Traffic Act, 1962.

Prince Edward Island

Administration.—The Provincial Secretary, Charlottetown.

Legislation.—The Highway Traffic Act (RSPEI 1951, c. 73).

Nova Scotia

Administration.—Registry of Motor Vehicles, Department of Highways, Halifax.

Legislation.—The Motor Vehicle Act (1954, c. 184, as amended) and the Motor Carrier Act (1958, c. 7, as amended).

New Brunswick

Administration.—Motor Vehicle Division, Provincial Tax Branch, Department of Provincial Secretary-Treasurer, Fredericton.

Legislation.—The Motor Vehicle Act (RSNB 1955, as amended).

Quebec

Administration.—Motor Vehicle Bureau, Department of Transportation and Communications, Parliament Bldgs., Quebec.

Legislation.—The Highway Code (RSQ 1941, c. 142 and 142A, as amended).

Ontario

Administration.—Ontario Department of Transport, Toronto.

Legislation.—The Highway Traffic Act (RSO 1960, c. 172), the Public Vehicles Act (RSO 1960, c. 337), the Public Commercial Vehicles Act (RSO 1960, c. 319) and the Motor Vehicle Accident Claims Act (1961-62, c. 84).

Manitoba

Administration.—Minister of Public Utilities, Winnipeg.

Legislation.—The Highway Traffic Act (RSM 1954, c. 112, as amended).

Saskatchewan

Administration.—Treasury Department, Highway Traffic Board, Revenue Building, Regina.

Legislation.—The Vehicles Act, 1957.

Alberta

Administration and Legislation.—The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicles Accident Indemnity Act (RSA 1955, c. 209) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

British Columbia

Administration and Legislation.—Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

Yukon Territory

Administration.—Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.

Legislation.—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77, as amended).

Northwest Territories

Administration.—Commissioner of the Northwest Territories. Address communications to the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

Legislation.—The Revised Ordinances of the Northwest Territories (SC 1956, c. 3, as amended).

Section 2.—Highways, Roads and Streets

Highways and Roads.—The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1961, the mileage of highways and rural roads in Canada was 430,004, an increase of 8,556 miles over the 421,448 reported in 1960. The 430,004 miles include all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the milages in census metropolitan areas and urban centres of more than 1,000 population. The latter are given separately under the heading of "Urban Streets", p. 774.

**1.—Highway and Rural Road Milage classified by Type and by Province,
1961 with Totals for 1957-61**

NOTE.—Excludes urban streets but includes milages under jurisdiction of rural and small urban municipalities; excludes milages of all roads on Indian reservations except those of flexible pavement.

Classification	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
Surfaced....	4,125	2,464	10,482	13,670	43,016	72,341	22,489	41,164	52,516	18,964	2,004	283,226
Rigid pavement	—	13	11	4	469	1,461	227	—	17	49	—	2,251
Flexible pavement....	405	881	3,347	3,595	12,650	18,470	2,606	2,768	4,044	5,505	8	54,279
Gravel.....	3,720	1,570	7,124	10,071	29,897	52,410	19,647	38,396	48,455	13,410	1,996	226,696
Earth.....	3,012	814	4,865	—	10,556	3,720	14,390	32,744	18,097	8,333	247	146,778
Totals, 1961..	7,137	3,278	15,347	13,670	53,572	76,061	36,879	123,908	70,613	27,297	2,251	430,004
1960..	6,988	3,238	15,648	13,424	53,804	74,586	35,613	120,060	69,060	26,729	2,298	421,448
1959..	6,873	3,250	15,374	13,198	52,588	72,821	39,410	118,934	67,647	30,825	2,115	423,035
1958..	6,609	3,199	15,338	13,168	50,518	72,016 ¹	21,038	120,992 ²	64,077 ²	28,425 ²	1,995 ²	397,381 ¹
1957..	6,319	3,198	15,327	13,128	50,196	76,232	21,008	124,494	88,842	22,892	2,313	423,339

¹ Decrease due to exclusion of unused road allowance included in 1957.

² Decrease from 1957 due to

elimination of duplications in reporting.

³ Includes roads in Provincial Parks and forest development and mining roads not included previously.

Total expenditure on highways and rural roads in the year ended Mar. 31, 1962 was \$753,515,554, an amount 5.2 p.c. lower than that for the previous fiscal year; construction expenditures decreased by 9.6 p.c. while maintenance costs were 5.7 p.c. higher. Table 2 shows expenditure by province and the federal-provincial-municipal distribution of such expenditure for the years ended Mar. 31, 1961 and 1962.

2.—Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1961 and 1962

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books.

Item and Province or Territory	1961	1962	Item and Province or Territory	1961	1962
	\$'000	\$'000		\$'000	\$'000
Construction	558,955	505,303	Administration and General	32,005	32,733
Newfoundland.....	15,220	8,133	Newfoundland.....	575	480
Prince Edward Island.....	4,905	5,633	Prince Edward Island.....	172	79
Nova Scotia.....	22,308	18,010	Nova Scotia.....	1,936	1,905
New Brunswick.....	24,003	20,037	New Brunswick.....	1,267	1,322
Quebec.....	90,256	80,869	Quebec.....	4,771	7,008
Ontario.....	180,983	167,907	Ontario.....	13,833	12,646
Manitoba.....	32,182	24,307	Manitoba.....	2,603	2,502
Saskatchewan.....	35,939	31,738	Saskatchewan.....	1,459	1,353
Alberta.....	51,848	51,088	Alberta.....	893	1,016
British Columbia.....	93,066	89,788	British Columbia.....	3,805	3,831
Yukon and N.W.T.....	8,245	7,793	Yukon and N.W.T.....	503	392
Maintenance	203,913	215,450	Totals	794,873	753,516
Newfoundland.....	8,051	8,422	Distribution of All Expenditure		
Prince Edward Island.....	1,994	2,316	Federal	110,707	91,294
Nova Scotia.....	12,055	12,217	Provincial	609,100	596,414
New Brunswick.....	13,349	14,425	Municipal	69,764	62,433
Quebec.....	54,351	61,583	Other	5,302	3,374
Ontario.....	47,028	57,367			
Manitoba.....	7,245	7,633			
Saskatchewan.....	12,378	11,438			
Alberta.....	27,163	19,325			
British Columbia.....	17,583	18,840			
Yukon and N.W.T.....	2,716	1,914			

¹ Includes federal administrative costs re Trans-Canada Highway amounting to \$188,265 in 1960-61 and \$198,500 in 1961-62.

The Trans-Canada Highway.—The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with data on specifications and route across the participating provinces, in the 1951 Year Book, pp. 631-634. Construction progress and changes in legislation are reported in subsequent editions.

Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces, except Quebec. Construction standards were set and the date of completion fixed. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces, and those sections within the National Parks were to be the responsibility of the Federal Government. Later amendments to the Act increased the extent of federal financial participation and extended the period in which construction costs might be incurred under the Act to May 1964. In 1960, Quebec became a participant.

Although construction was still going on in a number of sections, the closing in 1962 of the last major gap—in the Rocky Mountains—made it possible for the first time to drive the entire length of the 4,860-mile route. The Trans-Canada Highway was officially opened on Sept. 3, 1962.

Provincial milages are approximately as follows: Newfoundland, 540; Prince Edward Island, 71; Nova Scotia, 318; New Brunswick, 390; Quebec, 399; Ontario, 1,453; Manitoba, 309; Saskatchewan, 406; Alberta, 282; and British Columbia, 552. Length through the National Parks totalled 140 miles.

Up to Mar. 31, 1963, contractual commitments for new construction on the Highway amounted to \$727,720,108, of which the federal share approximated \$400,000,000. Federal payments to the provinces for prior, interim and new construction totalled \$374,500,938. On-site labour expended on the Highway up to Mar. 31, 1963 was 12,004,244 eight-hour man-days of employment; off-site employment required for the provision of necessary

material and services was estimated at 20,407,215 man-days. Paving to specified standards had been completed over a distance of 3,325 miles and 658 bridges, overpasses and other structures of more than 20-foot span had been or were being constructed.

Roads to Resources and Roads in the North.—The *Roads to Resources Program* is a national undertaking started in 1958 to provide access to areas potentially rich in natural resources. Agreements have been signed with all ten provinces that will eventually result in the construction or reconstruction of more than 4,700 miles of road. Progress of the program to May 1, 1963 was as follows:—

Province	Estimated Total Cost	Value of Approved Contracts	Provincial Expenditure ¹	Federal Contri- bution	Total Milage	Milage Completed
	\$	\$	\$	\$	No.	No.
Newfoundland.....	16,058,800	11,257,707	5,864,900	2,932,450	319	219
Prince Edward Island.....	15,000,000	13,784,723	8,901,870	4,450,935	447	277
Nova Scotia.....	16,880,437	13,600,746	12,105,502	6,052,751	489	318
New Brunswick.....	20,562,000	11,676,066	9,119,982	4,499,999	426	91
Quebec.....	13,435,000 ²	5,596,287	6,254,465	3,028,134	248	123
Ontario.....	21,668,765	11,458,876	10,481,026	4,663,764	562	213
Manitoba.....	19,370,000	11,196,553	9,932,368	4,966,184	693	248
Saskatchewan.....	22,950,000	11,649,089	10,078,751	5,039,377	811	348
Alberta.....	20,380,000	13,360,750	11,687,138	5,843,569	416	158
British Columbia.....	20,500,000	14,145,000	10,097,550	5,048,775	321	111
TOTALS.....	186,805,002	117,725,797	94,523,552	46,525,938	4,732	2,106

¹ Includes only expenditures reported by the provinces to the Federal Government.
² Additional projects to be included later will bring the total to \$15,000,000.

In several provinces the total estimated cost exceeds the \$15,000,000 shareable under the agreement but the total federal contribution to each province will remain at \$7,500,000. Private companies share in the cost of some roads that will be of direct benefit to them.

A road and causeway to link New World Island to the provincial road system in Newfoundland is the most easterly road in the program and is intended to assist the fishing industry in that portion of the province. The most westerly road is one of 321 miles extending from Stewart northeasterly to Cassiar, which will open up a new mining area in British Columbia. The most northerly project is the reconstruction of the 300-mile section of the Mackenzie Highway in Alberta, which will connect with the Northwest Territories road system being built by the Federal Government. The most southerly project is the improvement of an existing 5.4-mile road between Yarmouth Light and the town limits of Yarmouth in Nova Scotia, which is intended to increase the tourist potential in that section. The roads in the program vary in length from the less-than-one-mile French River Spur in Prince Edward Island to the 505-mile Uranium City road in northern Saskatchewan. In any province the construction program may consist of as many projects as can qualify for inclusion and for which funds are available; the current program consists of about 100 projects. In contrast to one project program in British Columbia, there are 30 in Prince Edward Island.

The *Development Road Program* in the Yukon Territory and the Mackenzie District of the Northwest Territories is distinct from the Roads to Resources Program in that the Federal Government is responsible for construction; maintenance costs are shared by the Federal Government and the Territorial Government concerned on an 85-15-p.c. basis.

Approximately 900 miles of road will be built in the Yukon Territory at an estimated cost of \$36,000,000 and 1,300 miles of road in the Northwest Territories at an estimated cost of \$64,000,000. At the end of 1962, more than 500 miles of road had been completed in the Yukon Territory and 427 miles were in use in the Northwest Territories. The largest single project carried out in the Northwest Territories was the reconstruction of the Mackenzie Highway. The first 20 miles of an extension leading from Yellowknife to MacKay Lake was completed in 1962.

Revisions in the territorial roads policy came into effect in April 1962, permitting greater federal financial assistance to mining companies for exploration and development work, including road construction. Where two or more companies are developing a mineralized region, a mine development road may be built and paid for by the Federal Government. Assistance may also be given in the building of more elementary roads to give access to a mine or to enable the supplies for development to be transported to a property. Two thirds of the cost of a mine-access road may be paid by the Federal Government, and one half the cost of a basic tote-trail may be contributed by the Territorial Government concerned. Tote-trail assistance will be financed from a \$50,000 fund provided to each territorial government by the Federal Government.

Urban Streets.—Information on urban streets is obtained from the local administrations of all areas with populations over 1,000, all areas located within census metropolitan areas, improvement districts over 1,000 population and rural municipalities over 15,000 population. Brief statistical data are given in Table 3; more detail may be obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue No. 53-201).

3.—Statistics of Urban Streets, 1957-61

Item		1957	1958	1959	1960	1961
Total Expenditure Reported¹	\$'000	147,470	164,310	191,950	272,388	235,533
New construction.....	\$'000	68,428	72,085	93,884	166,324	123,530
Reconstruction, repair, cleaning, sanding, snow removal, administration, etc.....	\$'000	79,042	92,225	98,066	106,064	112,183
Total Urban Millage	No.	24,841	25,652	37,614	37,769	37,102
Rigid pavement.....	"	5,239	5,659	6,072	6,448	6,281
Flexible pavement.....	"	8,121	8,504	13,173	13,395	15,214
Gravel and other surfaces.....	"	9,581	9,741	15,165	15,012	13,785
Earth.....	"	1,900	1,748	3,204	2,914	1,872

¹ Includes expenditures on sidewalks, footpaths, bridges and ferries.

Section 3.—Motor Vehicles

Motor Vehicle Registrations.—Registrations continue to increase year by year, a record of 5,774,810 being reached in 1962. Of that total, 4,531,384 were passenger cars—one for every 4.1 persons. Registrations by province are given in Table 4 and types of vehicles registered by province in Table 5.

4.—Motor Vehicles Registered, by Province, 1953-62

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures for 1904-52 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1953.....	29,576	20,286	129,564	93,914	617,855	1,406,119	203,652	257,504	318,812	348,830	3,430,672
1954.....	34,423	20,848	133,087	99,058	674,114	1,489,980	210,471	267,373	338,541	371,711	3,644,589
1955.....	39,766	22,145	149,841	106,648	743,682	1,617,853	222,474	274,950	356,839	409,343	3,948,652
1956.....	45,997	23,373	157,544	111,315	844,827	1,710,240	240,008	291,265	381,153	454,217	4,265,437
1957.....	47,982	23,725	164,286	116,712	901,065	1,793,499	246,188	300,326	405,229	491,884	4,497,091
1958.....	51,575	25,504	164,954	121,715	968,058	1,868,922	256,064	314,423	430,081	515,244	4,723,825
1959.....	51,145	27,502	189,435	129,629	1,040,366	1,973,737	269,974	326,690	456,458	545,491	5,017,686
1960.....	61,952	30,147	187,065	138,469	1,096,053	2,062,484	285,689	335,148	486,370	564,351	5,256,341
1961.....	65,270	32,166	206,691	145,951	1,183,978	2,126,270	299,998	349,817	509,298	588,280	5,517,023
1962.....	74,119	33,888	206,370	151,360	1,261,180	2,177,148	312,272	372,219	535,459	620,426	5,774,810

¹ Includes registrations in the Yukon and Northwest Territories.

5.—Types of Motor Vehicles Registered, by Province, 1961 and 1962

Year and Province or Territory	Passenger Cars ¹	Commercial Cars, Trucks, etc. ²	Buses	Motor-cycles	Total
	No.	No.	No.	No.	No.
1961					
Newfoundland.....	48,200	16,600	190	280	65,270
Prince Edward Island.....	20,440	11,605	10	111	32,166
Nova Scotia.....	156,663	48,063	1,074	891	206,691
New Brunswick.....	112,764	31,734	617	836	145,951
Quebec.....	909,322	254,334	7,388	12,934	1,183,978
Ontario.....	1,794,444	316,669	6,213	8,944	2,126,270
Manitoba.....	226,376	72,103	185	1,334	299,998
Saskatchewan.....	228,269	120,558	230	760	349,817
Alberta.....	356,721	144,976	3,596	4,005	509,298
British Columbia.....	467,370	116,671	3	4,239	588,280
Yukon and Northwest Territories.....	5,113	4,117	46	28	9,304
Canada, 1961.....	4,325,682	1,137,430	19,549	34,362	5,517,023
1962					
Newfoundland.....	54,373	19,174	270	302	74,119
Prince Edward Island.....	22,092	11,651	8	137	33,888
Nova Scotia.....	153,595	50,810	1,152	813	206,370
New Brunswick.....	118,483	31,399	666	812	151,360
Quebec.....	986,457	274,334	8,161	12,228	1,281,180
Ontario.....	1,840,119	322,888	6,818	7,323	2,177,148
Manitoba.....	236,737	73,978	189	1,368	312,272
Saskatchewan.....	242,271	128,894	234	820	372,219
Alberta.....	376,095	150,727	3,758	4,879	535,459
British Columbia.....	495,308	120,729	3	4,389	620,426
Yukon and Northwest Territories.....	5,854	4,440	45	30	10,369
Canada, 1962.....	4,531,384	1,189,024	21,301	33,101	5,774,810

¹ Includes taxis.² Includes service cars, road tractors, etc.³ Included with trucks.

Apparent Supply of Automobiles.—The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XIX on Domestic Trade and Prices.

6.—Apparent Supply of New Automobiles, 1952-61

Year	Cars Made for Sale in Canada		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Pas-senger	Com-mercial ¹	Pas-senger	Com-mercial	Pas-senger	Com-mercial	Pas-senger	Com-mercial ¹
	No.	No.	No.	No.	No.	No.	No.	No.
1952.....	245,443	112,485	35,665	4,328	999	11	280,109	116,802
1953.....	319,937	100,772	53,179	5,296	44	3	373,072	106,065
1954.....	267,462	59,666	38,509	4,973	84	25	305,877	64,614
1955.....	349,306	69,186	48,546	9,403	22	24	397,830	78,565
1956.....	349,809	85,094	76,200	13,032	45	42	425,964	98,084
1957.....	318,416	64,857	70,796	9,215	65	39	389,147	74,033
1958.....	280,677	55,908	104,195	9,182	190	8	384,682	65,082
1959.....	285,841	63,429	153,932	11,632	549	6	439,224	75,055
1960.....	307,499	66,293	170,653	9,376	179	56	477,973	75,613
1961.....	312,599	80,270	106,865	9,487	700	35	418,764	69,722

¹ Includes Armed Forces vehicles.

Provincial Government Revenue from Motor Vehicles.—The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government income. In every province licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1961 the average cost per motor vehicle for operating taxes and licences was about \$113.

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Motive fuel tax rates are given in the Public Finance Chapter, Section 2, Subsection 2 on Provincial Taxes; Federal Government revenue from import duties, excise and sales taxes is given in the same chapter, Section 3, Subsection 3 on Revenue from Taxation.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, 1961 and 1962

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences	Public Service Vehicle Tax	Motive Fuel Taxes	Total ¹
	\$	\$	\$	\$	\$	\$	\$
1961²							
Newfoundland.....	787,054	928,786	2,107	220,871	582	5,857,538 ³	8,036,124
Prince Edward Island..	330,788	375,793	478	73,184	2,927	2,421,992	3,215,191
Nova Scotia.....	2,693,148	2,388,834	³	403,218	141,638	15,984,295	21,978,105
New Brunswick.....	2,140,808	2,040,710	4,414	360,901	—	12,685,992	17,480,898
Quebec.....	19,602,459	16,295,984	52,612	3,304,166	1,200,335	100,230,894	141,872,093
Ontario.....	28,891,414	30,614,958	94,990	3,043,869	3,392,092	164,454,632	233,360,554
Manitoba.....	3,502,285	3,102,563	6,129	121,956	60,878	16,107,024	23,434,947
Saskatchewan.....	3,236,301	3,435,876	⁴	438,947	—	21,687,019	29,630,077
Alberta.....	4,950,929	7,092,207	⁵	237,006	171,988	26,370,035	39,887,262
British Columbia.....	8,978,681	7,728,477	18,316	1,118,683	291,732	30,149,973	49,033,262
Yukon and N.W.T.....	55,277	79,960	59	26,340	26,503	290,091	496,628
Canada, 1961.....	75,169,144	74,084,148	179,105⁶	9,349,141	5,288,675⁶	396,239,485	568,424,941
1962							
Newfoundland.....	836,344	985,211	2,156	226,961	534	6,613,227	8,908,756
Prince Edward Island..	348,712	364,664	399	79,327	2,842	2,684,280	3,491,816
Nova Scotia.....	2,872,704	2,456,783	³	410,366	95,157	18,939,502	25,148,466
New Brunswick.....	2,263,686	2,142,904	4,359	347,955	—	15,140,569	20,169,363
Quebec.....	21,169,505	17,878,660	51,736	3,544,585	1,415,075	106,837,884	152,440,117
Ontario.....	29,373,640	32,096,639	73,947	3,103,838	3,640,175	172,737,672	244,267,841
Manitoba.....	3,688,947	3,255,738	5,656	880,853	54,847	21,514,604	29,944,905
Saskatchewan.....	3,316,380	3,633,450	⁴	450,324	—	25,446,189	33,828,540
Alberta.....	5,182,063	7,389,950	⁵	766,892	198,977	32,951,433	47,522,329
British Columbia.....	9,326,744	7,970,487	18,965	1,234,305	260,117	38,496,022	58,080,048
Yukon and N.W.T.....	58,729	79,495	61	23,909	33,731	272,231	488,918
Canada, 1962.....	78,437,454	78,253,981	157,279⁶	11,069,315	5,701,455	441,633,613	624,291,099

¹ Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws. ² Includes commissions allowed to gasoline agents and refunds.

³ Included with other motor vehicles.

⁴ Included with miscellaneous revenues and therefore in total.

⁵ Included with passenger automobiles.

⁶ Not complete.

Sales of Motive Fuels.—In order to estimate the total amount of motive fuel purchased in Canada for use in motor vehicles on public streets and highways, it has been necessary to eliminate from the total the amount of motive fuel used for other purposes. Thus, from the total or gross sales, including imports and exports, the following are subtracted to obtain net sales: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds were paid. Net sales are thus defined as sales on

which a tax or taxes have been paid in full and are considered to be approximately equivalent to the actual amount of motive fuel purchased in Canada for use on public streets and highways. However, net sales include an indeterminate amount of motive fuel which is taxable but not used on public streets and highways, such as, in some provinces, aviation gasoline and turbo fuel used by aircraft and motive fuels consumed by power boats, but the total effect of this is considered to be relatively insignificant.

As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.1 p.c. in 1961 and net sales of diesel oil increased by 10.9 p.c.

8.—Sales of Motive Fuels, by Province, 1957-61

Province or Territory	1957	1958	1959	1960	1961
GASOLINE AND LIQUEFIED PETROLEUM GASES					
	gal.	gal.	gal.	gal.	gal.
Newfoundland	25,526,674	28,026,795	30,443,029	35,550,628	38,929,496
Prince Edward Island	14,293,703	16,152,969	17,854,271	17,872,406	18,098,741
Nova Scotia	94,852,532	99,662,302	104,250,854	108,488,604	111,462,514
New Brunswick	83,717,829	95,159,403	101,261,096	105,835,219	96,715,991
Quebec	660,810,503	721,348,397	755,247,641	819,390,839	869,222,682
Ontario	1,237,723,059	1,295,797,122	1,340,853,693	1,402,538,126	1,446,057,743
Manitoba	219,559,349	225,700,542	225,912,673	239,928,853	237,235,972
Saskatchewan	280,457,734	286,607,918	283,963,876	298,209,628	278,414,495
Alberta	402,560,725	442,191,585	474,001,753	515,417,285	552,879,855
British Columbia	324,972,114	325,269,939	345,370,730	368,535,669	378,376,267
Yukon and Northwest Territories	4,734,949 ¹	8,939,770	11,518,629	9,756,248	10,591,858
Totals, Gross Sales	3,349,209,171	3,544,856,742	3,690,678,245	3,921,523,005	4,037,985,614
Refunds and exemptions	723,118,141	812,898,257	826,000,245	904,702,945	897,788,029
Totals, Net Sales	2,626,091,030	2,731,958,485	2,864,678,000	3,016,820,060	3,140,197,585
DIESEL OIL					
	gal.	gal.	gal.	gal.	gal.
Totals, Net Sales	92,832,457	95,479,919	120,129,508	128,954,900	143,042,427

¹ Yukon Territory only.

Motor Carriers—Freight.*—Statistics of the common carrier segment of the inter-city and rural motor carrier industry have been collected on a continuing basis since 1941. However, as little capital is required to enter the trucking business, many marginal operators are associated with the industry and the large turnover and numerous changes each year have created many problems in the collection of statistics, although these are gradually being overcome. Statistics of contract carriers are available from 1958.

* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight*, Part I (Catalogue No. 53-222) and Part II (Catalogue No. 53-223).

9.—Summary Statistics of Motor Carriers—Freight, 1960 and 1961

Item		Common		Contract	
		1960	1961	1960	1961
Carriers Reporting	No.	3,410	3,396	1,582	1,643
Property Account—Fixed Assets (motor carrier business)	\$	257,748,902	283,544,999	54,590,486	62,774,541
Operating Revenues	\$	351,204,428	369,956,818	64,723,319	73,589,340
Freight—					
Intercity and rural.....	\$	338,895,506	358,905,926	62,501,315	70,149,694
Local.....	\$	5,155,549	4,637,476	1,045,555	1,329,950
Other.....	\$	7,153,373	6,413,416	1,176,449	2,109,696
Operating Expenses	\$	332,685,794	349,397,130	57,771,713	66,248,095
Maintenance.....	\$	46,443,474	48,949,584	9,885,015	11,168,507
Wages of drivers and helpers.....	\$	69,980,465	74,022,863	12,512,268	15,017,785
Other (fuel, fuel taxes, rents and depreciation).....	\$	132,754,005	139,089,164	25,700,097	28,177,188
Licence expense.....	\$	11,465,969	12,608,094	2,194,374	2,541,370
Administration and general.....	\$	72,041,881	74,727,425	7,479,959	9,343,245
Net Operating Revenues	\$	18,518,634	20,559,688	6,951,606	7,341,245
Fuel Consumed—					
Gasoline.....	'000 gal.	81,268	84,358	20,349	22,303
Diesel oil.....		25,593	29,474	4,016	4,417
Liquefied petroleum gases.....	"	31	1	164	69
Employees—					
Average employed during year.....	No.	29,000	29,135	4,178	4,895
Total salaries and wages.....	\$	121,373,312	128,473,330	16,838,920	20,967,925
Working proprietors.....	No.	2,537	2,819	1,313	1,341
Withdrawals of working proprietors.....	\$	7,691,936	8,136,704	4,551,451	4,652,327
Equipment—					
Trucks with gasoline engines.....	No.	11,118	11,162	3,317	3,852
Trucks with diesel engines.....	"	205	191	162	153
Road tractors with gasoline engines.....	"	7,323	7,601	1,253	1,431
Road tractors with diesel engines.....	"	2,605	2,709	344	445
Semi-trailers.....	"	15,453	16,488	1,968	2,275
Trailers.....	"	527	565	151	284

Household Goods Movers and Storage Operators.*—Statistics of household goods movers and storage operators, summarized in Table 10, were first presented separately in 1960; before that date, they were included with either motor carriers—freight or warehousing, depending upon the predominant source of operating revenues of the companies concerned.

* Statistics are given in more detail in DBS annual report *Moving and Storage, Household Goods* (Catalogue No. 53-221).

10.—Summary Statistics of Household Goods Movers and Storage Operators, 1960 and 1961

Item		1960	1961
Companies Reporting	No.	163	192
Investment in Land, Warehouses, Vehicles, etc.	\$	18,016,538	24,506,043
Revenues	\$	30,962,777	34,515,516
Cartage.....	\$	21,882,082	24,329,327
Storage.....	\$	4,374,983	4,758,767
Packing.....	\$	3,116,592	3,605,636
Other.....	\$	1,589,120	1,821,786
Operating Expenses	\$	30,324,049	33,547,487
Maintenance.....	\$	2,226,563	2,426,787
Salaries and wages (charged to operations).....	\$	9,925,366	10,692,026
Cartage expenses.....	\$	1,884,625	2,269,976
Storage expenses.....	\$	2,384,414	2,505,279
Other operating expenses.....	\$	13,903,081	15,659,419
Net Operating Revenues	\$	638,728	768,029

10.—Summary Statistics of Household Goods Movers and Storage Operators, 1960 and 1961 —concluded

Item		1960	1961
Employees—			
Average employed during year..... No.		3,658	3,906
Salaries and wages..... \$		13,701,905	14,937,657
Storage Capacity—			
Household goods..... cu. ft.		27,372,708	30,235,601
Other..... "		1,793,310	4,049,382
Vehicles—			
Trucks..... No.		1,302	1,437
Tractors..... "		650	672
Semi-trailers..... "		647	711
Trailers..... "		40	39

Passenger Buses.*—The operations of companies predominantly engaged in passenger bus service are summarized in Table 11. Data refer to the for-hire segment of the industry and only those firms engaged in intercity and rural operations and having an annual gross revenue of \$3,000 or over are covered. Operators predominantly involved in the provision of school bus service are not included.

* Statistics are given in more detail in DBS annual report *Passenger Bus Statistics* (Catalogue No. 53-215).

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1958-62

NOTE.—Only carriers with an annual gross revenue of \$6,000 or over are included.

Item		1958	1959	1960	1961	1962
Carriers Reporting..... No.		154	162	162	161	159
Property Account—Fixed Assets..... \$		59,213,624	66,083,872	65,351,765	66,489,620	70,436,779
Revenues..... \$		46,787,640	49,131,642	51,076,097	53,122,514	57,057,805
Regular Passenger Service—						
Intercity and rural..... \$		37,930,050	40,275,902	41,773,022	42,969,210	45,051,213
Urban and suburban..... \$		1,771,348	983,739	895,396	743,846	686,019
Chartered service..... \$		3,641,525	3,966,249	4,202,019	4,722,831	6,125,050
Other transportation revenue..... \$		3,444,717	3,905,752	4,205,660	4,686,627	5,195,523
Operating Expenses..... \$		43,005,593	44,945,424	46,621,230	49,060,235	51,845,161
Maintenance..... \$		9,172,354	8,979,538	9,300,151	9,208,151	10,927,855
Wages and bonuses of drivers and helpers..... \$		10,470,104	11,246,010	11,791,201	12,321,120	13,388,754
Other transportation expenses..... \$		10,213,088	10,634,177	10,510,437	10,318,062	10,677,733
Operating taxes and licences..... \$		3,569,911	3,934,147	4,175,011	4,322,054	4,237,632
Other operating expenses..... \$		9,580,136	10,151,552	10,847,430	12,890,908	12,613,187
Net Operating Revenues..... \$		3,782,047	4,186,218	4,451,867	4,062,279	5,212,644
Traffic and Employees—						
Passengers—						
Regular Routes—						
Intercity and rural..... No.		51,578,248	53,807,135	55,592,546	54,052,706	50,591,146
Urban and suburban..... "		12,581,592	6,910,905	7,201,426	5,401,687	4,756,342
Special and chartered service..... "		4,696,157	4,788,193	5,780,121	4,834,020	5,347,173
Bus Miles—						
Regular Routes—						
Intercity and rural..... No.		83,319,763	86,694,483	87,880,424	88,424,751	90,753,096
Urban and suburban..... "		4,219,187	2,405,350	2,401,113	2,642,072	1,664,367
Special and chartered service..... "		6,066,251	6,297,288	7,024,478	8,128,367	10,049,231
Gasoline consumed..... gal.		6,903,530	6,028,607	5,740,358	5,090,177	4,501,251
Diesel oil consumed..... "		7,012,014	7,892,289	8,579,945	9,118,152	9,908,848
Employees—						
Average employed during year..... No.		5,156	5,062	5,110	5,049	4,662
Total salaries and wages..... \$		20,333,995	21,329,084	22,043,886	22,891,346	22,197,171
Working proprietors..... No.		55	66	74	67	58
Withdrawals of working proprietors..... \$		187,797	215,256	209,737	173,681	150,308
Equipment—						
Buses..... No.		2,300	2,367	2,388	2,340	2,393
Gasoline..... "		1,432	1,389	1,347	1,456	1,191
Diesel..... "		868	978	1,041	846	1,802

Motor Transport Traffic.*—Surveys of motor transport traffic in all provinces were placed on a continuing basis in 1957. Approximately 3 p.c. of total registrations were sampled for surveys of truck operations during each quarter of 1960. Each quarterly sample was spread over three survey weeks with one third of the sample being used for a seven-day period (Sunday through Saturday) per month.

Excluding vehicles that do not perform normal transportation services, such as cranes, tow trucks, road building equipment, etc., the average number of trucks licensed in Canada during the year 1961 was 942,900. Of these, 6.2 p.c. were for-hire carriers, 21.1 p.c. were private intercity trucks, 39.3 p.c. were private trucks operated predominantly within urban areas, and 33.4 p.c. were farm trucks. Almost one third of the total number were registered in Ontario and one half were registered in the two provinces of Ontario and Quebec.

For-hire trucks averaged 200,900 net ton-miles per vehicle and, although amounting to only 6.2 p.c. of total registrations, they accounted for 65 p.c. of the total net ton-miles performed by all commercial trucks in Canada, a result of the comparatively high average yearly mileage of for-hire trucks and also of the heavier average load carried (10.8 tons as compared with an average of 5.2 tons for all trucks). The predominance of heavier vehicles in the for-hire group also explains the low mileage per gallon of gasoline of 6.0 as compared with an average of 9.3 for all vehicles.

* Statistics are given in more detail in DBS annual reports *Motor Transport Traffic* for Canada and the provinces (Catalogue Nos. 53-207—53-214).

12.—Summary Statistics of Truck Population and Traffic, by Type of Operation, 1960 and 1961

Year and Item		For-Hire	Private			Total
			Intercity	Urban	Farm	
1960						
Average Truck Population.....	No.	55,016	185,919	361,845	306,620	909,400
Atlantic Provinces.....	"	2,075	36,262	21,971	11,692	72,000
Quebec.....	"	15,700	29,353	86,947	35,500	165,500
Ontario.....	"	20,741	61,956	137,550	62,253	282,500
Manitoba.....	"	1,500	2,700	23,700	32,600	60,500
Saskatchewan.....	"	1,600	8,618	12,722	81,400	104,400
Alberta.....	"	9,400	18,760	25,340	71,000	124,500
British Columbia.....	"	6,000	23,270	53,555	12,175	100,000
Miles Travelled.....	'000,000	1,348.4	1,861.9	2,104.4	963.3	6,278.1
Atlantic Provinces.....	"	28.9	267.1	108.8	43.2	448.0
Quebec.....	"	288.7	401.2	642.6	122.7	1,455.2
Ontario.....	"	528.5	662.1	753.4	189.7	2,131.5
Manitoba.....	"	77.5	40.2	171.8	21.2	370.6
Saskatchewan.....	"	60.8	95.2	62.5	227.7	445.7
Alberta.....	"	255.4	170.9	126.5	255.7	808.5
British Columbia.....	"	111.5	225.2	238.8	43.1	618.6
Miles per gallon of gasoline.....	No.	6.0	9.9	11.0	12.7	9.6
Average weight of goods carried.....	ton	10.1	4.2	1.7	1.4	5.0
Average net ton-miles per truck.....	No.	181,500	18,200	4,900	1,500	17,200
Capacity utilized.....	p.c.	56.8	40.0	34.4	27.1	47.4
Average gross ton-miles per truck.....	No.	407,600	54,600	19,700	7,300	46,500
1961						
Average Truck Population.....	No.	58,306	198,804	370,942	314,848	942,900
Atlantic Provinces.....	"	2,001	37,013	22,326	11,360	72,700
Quebec.....	"	14,800	34,684	87,816	40,400	177,700
Ontario.....	"	21,305	69,283	139,398	62,514	292,900
Manitoba.....	"	1,600	2,900	25,700	33,300	63,500
Saskatchewan.....	"	1,700	9,542	12,553	83,900	107,700
Alberta.....	"	10,700	19,664	24,536	72,800	127,100
British Columbia.....	"	6,200	25,718	58,608	11,374	101,900
Miles Travelled.....	'000,000	1,486.2	2,126.4	2,224.0	923.9	6,760.5
Atlantic Provinces.....	"	30.2	293.5	121.7	45.0	490.4
Quebec.....	"	301.1	468.9	657.2	123.6	1,550.8
Ontario.....	"	527.9	785.2	797.5	186.7	2,367.3

12.—Summary Statistics of Truck Population and Traffic, by Type of Operation, 1960 and 1961—concluded

Year and Item	For-Hire	Private			Total
		Intercity	Urban	Farm	
1961—concluded					
Miles Travelled—concluded					
Manitoba.....'000,000	84.4	46.0	173.8	78.4	382.6
Saskatchewan....."	79.2	111.4	64.4	200.1	455.1
Alberta....."	273.5	207.8	140.3	251.6	873.2
British Columbia....."	129.9	213.6	269.1	38.5	651.1
Miles per gallon of gasoline..... No.	6.0	9.6	10.7	12.7	9.3
Average weight of goods carried..... ton	10.8	4.2	1.8	1.3	5.2
Average net ton-miles per truck..... No.	200,900	19,800	5,100	1,400	19,100
Capacity utilized..... p.c.	57.0	40.2	34.4	26.6	48.0
Average gross ton-miles per truck..... No.	449,900	59,200	20,600	7,900	51,000

Urban Transit Systems.—The collection of statistical information on urban transit systems has been extensively reorganized in the past few years. Because of major changes made in the types of vehicles used for mass passenger movement in urban centres, the statistical series that began with the financial and operating statistics of electric railways and later included their motor bus and trolley coach lines, became quite inadequate. The current series, which was started in 1956, includes operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

13.—Summary Statistics of Urban Transit System, 1958-62

Item	1958	1959	1960	1961	1962
Passenger Fares¹ No.	1,079,712,025	1,056,812,775	1,029,305,402	987,319,165	995,169,878
Motor bus....."	603,090,330	637,996,304	645,353,267	631,202,683	643,307,389
Trolley coach....."	214,246,021	201,388,376	191,202,462	175,491,968	172,487,505
Streetcar....."	218,413,895	173,224,683	148,863,223	138,585,305	136,550,346
Subway car....."	35,932,278	35,869,394	34,663,146	32,993,117	32,874,696
Chartered....."	8,029,501	8,334,018	9,223,304	9,046,092	9,949,942
Vehicle-Miles Run No.	199,480,833	200,085,927	200,099,078	198,537,833	202,445,806
Motor bus....."	122,489,063	130,122,179	133,179,494	134,363,690	138,252,679
Trolley coach....."	36,878,121	35,874,081	35,136,724	32,899,859	32,862,744
Streetcar....."	31,029,013	24,676,511	22,093,057	21,441,041	21,240,370
Subway car....."	6,921,792	6,969,728	7,053,302	7,018,476	6,951,856
Chartered....."	2,162,844	2,443,428	2,636,501	2,814,767	3,138,157
Fuel Consumed—					
Diesel oil..... gal.	12,719,288	15,071,113	16,847,010	17,266,159	18,385,972
Gasoline....."	12,004,077	11,083,205	9,939,892	9,108,194	9,096,746
Liquid petroleum gases....."	284,219	290,166	272,157	334,170	188,000
Passenger Vehicles in Service... No.	7,070	7,268	7,180	7,228	7,386
Motor bus....."	4,630	5,030	4,998	5,081	5,267
Trolley coach....."	1,221	1,221	1,175	1,174	1,170
Streetcar....."	1,083	877	867	833	791
Subway car....."	136	140	140	140	158
Finances—					
Total assets..... \$	445,930,475	463,001,240	475,888,063	285,697,114 ²	292,158,071 ²
Long-term debt..... \$	221,357,256	287,927,330	286,602,882	176,600,938 ²	179,674,576 ²
Capital stock and surplus..... \$	159,391,975	102,552,156	116,934,953	74,209,868 ²	74,991,464 ²
Operating revenues..... \$	133,732,764	140,195,856	140,848,593	138,440,041	141,608,500
Operating expenses..... \$	129,625,050	134,917,105	135,980,728	137,257,702	141,620,749
Ratio of expenses to revenues... p.c.	96.93	96.23	96.54	99.14	100.01
Employees..... No.	19,110	18,892	18,549	18,100	18,157
Salaries and wages..... \$	78,734,325	82,209,754	84,697,981	85,008,940	88,145,609

¹ Initial revenue passenger fares, excluding transfers.

² Excludes British Columbia Electric Railway Company (British Columbia Hydro and Power Authority in 1962).

Motor Vehicle Accidents.—Motorists are required by law to report accidents but complete statistics of these accidents are not available for all provinces. The numbers of deaths from motor vehicle traffic accidents in each province are shown in Table 14 for the years 1952-61. It should be noted, however, that direct comparison of these figures between provinces is of little value because of differences in size, population, motor vehicle density, climate, road conditions, tourist cars, etc., all of which are factors in accidents. Also, the data presented in Table 15 relate to traffic accidents only and consequently may not be compared with figures of Table 14 which include fatalities occurring elsewhere than on public streets or roads.

14.—Deaths Resulting from Motor Vehicle Traffic and Non-traffic Accidents, by Province of Occurrence, 1952-61

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1952....	23	28	120	117	859	1,010	107	106	139	209	4	2,722
1953....	29	13	124	111	901	1,082	102	124	220	208	7	2,921
1954....	23	12	157	123	755	1,045	121	74	189	211	5	2,715
1955....	46	16	123	137	888	1,111	100	125	197	225	4	2,972
1956....	43	16	152	151	803	1,180	145	134	236	316	8	3,184
1957....	38	13	141	155	879	1,279	130	143	224	252	4	3,258
1958....	44	20	161	155	821	1,112	125	134	263	282	1	3,118
1959....	36	30	121	106	871	1,187	147	168	248	309	8	3,231
1960....	45	13	162	166	853	1,166	122	164	290	294	8	3,283
1961....	50	16	149	154	889	1,268	134	171	270	320	5	3,426

15.—Motor Vehicle Traffic Accidents, by Province, 1961

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Accidents Reported.....	4,879	1,161	9,942	7,356	79,917	85,577	13,402	13,583	23,331	27,203	336	266,687
Fatal—												
Resulting in death of one or more persons.....	40	13	134	136	773	1,098	116	145	214	272	3	2,944
Non-fatal—												
Resulting in injury to one or more persons....	1,058	251	1,982	1,963	17,220	25,643	3,660	3,281	4,381	8,076	84	67,599
Resulting in property damage only ¹	3,781	897	7,826	5,257	61,924	58,836	9,626	10,157	18,736	18,855	249	196,144
Persons Killed.....	50	16	149	154	899	1,268	134	171	270	320	5	3,426
Drivers.....	7	5	42	43	2	502	50	79	118	108	2	956 ³
Passengers.....	21	5	46	52	572	393	49	70	97	125	2	1,432
Pedestrians.....	19	6	58	56	317	312	30	15	39	78	1	931
Bicyclists.....	2	—	2	3	2	32	1	2	2	6	—	50 ³
Motorcyclists and passengers.....	—	—	—	1	2	16	—	1	—	3	—	21 ³
Others.....	1	—	—	—	2	13	4	4	14	—	—	36 ³
Persons Injured.....	1,394	366	2,796	2,871	25,142	37,146	5,238	5,227	6,851	12,101	131	99,263
Drivers.....	276	142	947	1,034	2	14,242	2,075	2,188	2,687	4,479	59	28,129 ³
Passengers.....	485	167	1,132	1,218	19,843	15,400	2,343	2,607	3,281	5,968	58	62,502
Pedestrians.....	577	51	622	519	5,299	5,683	612	338	613	1,157	13	15,484
Bicyclists.....	35	5	75	82	2	1,281	176	75	133	325	—	2,187 ³
Motorcyclists and passengers.....	4	1	15	4	2	473	32	12	117	161	1	816 ³
Others.....	17	—	5	18	2	67	—	7	20	11	—	145 ³
Total Property Damage.....	\$'000 2,066	427	3,989	3,366	..	39,625	5,995	5,927	10,158	12,924	219	84,696⁵

¹ All reported accidents are those resulting in property damage estimated at \$100 or over.

² Included with passengers in Quebec.

³ Incomplete; see footnotes 2 and 4.

⁴ Included with bicyclists in New Brunswick.

⁵ Excludes Quebec.

PART IV.—WATER TRANSPORT*

The Canada Shipping Act.—Legislation regarding all phases of shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

Section 1.—Shipping Facilities and Traffic

Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that the commerce of Canada is not dependent entirely upon Canadian shipping. However, a large part of the inland and coastal traffic is carried in ships of Canadian registry.

Up to June 1961, under the provisions of the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships enjoyed equal privileges with Canadian ships in the carriage of goods and passengers from one port in Canada to another port in Canada, commonly known as the coasting trade. Before the completion of the St. Lawrence Seaway, most of the domestic Great Lakes traffic was moved in Canadian-registered ships and the rights of other Commonwealth ships in this trade were largely theoretical. However, after the Seaway was finished, the intrusion of other Commonwealth ships, particularly from Britain, became a reality and, in order to restore the *status quo* as it existed before the advent of the Seaway, the Canada Shipping Act was amended to exclude the Great Lakes and the St. Lawrence River system from some of the reciprocal provisions of the Agreement. This amendment (SC 1960-61, c. 32) gives to Canadian-registered ships the exclusive right to carry goods and passengers between Canadian ports in the Great Lakes and the St. Lawrence River system from Havre St. Pierre westward.

Canadian Registry.—Under Part I of the Canada Shipping Act, ships in excess of 15 tons net register and pleasure yachts in excess of 20 tons net are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the Act restricts ownership to British subjects or bodies corporate incorporated under the law of a country of the Commonwealth or of the Republic of Ireland, and having their principal place of business in those countries. Under the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships are given the general designation 'British Ship'; and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping at one of the 73 Ports of Registry in Canada.

* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, administrative services, and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Canadian Maritime Commission; and canal traffic and statistics of shipping by the Public Finance and Transportation Division, Dominion Bureau of Statistics.

1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1960-62

NOTE.—Figures for 1935-59 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Province or Territory	1960		1961		1962	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
Newfoundland.....	797	70,452	808	73,034	809	77,194
Prince Edward Island.....	581	16,643	668	17,376	752	20,250
Nova Scotia.....	5,858	124,288	6,055	123,386	6,326	148,198
New Brunswick.....	1,853	65,467	1,983	74,188	2,126	78,856
Quebec.....	2,511	823,177	2,546	816,325	2,678	814,444
Ontario.....	2,336	859,955	2,376	890,574	2,425	888,440
Manitoba.....	107	14,491	107	16,761	105	16,808
Saskatchewan.....	—	—	—	—	—	—
Alberta.....	11	531	11	531	12	681
British Columbia.....	6,319	601,811	6,499	617,330	6,755	653,433
Yukon Territory.....	8	3,411	6	1,435	6	1,435
Northwest Territories.....	—	—	—	—	—	—
Canada.....	20,351	2,580,226	21,059	2,630,940	21,394	2,699,739

Shipping Traffic.—Before 1952 the only information available on shipping activity in Canada was the number and registered net tonnage of vessels operating in and out of Canadian customs ports and the tonnage of cargoes loaded and unloaded at these ports destined for or arriving from foreign countries. In 1952 the coastwise movement of cargo in and out of customs ports was reported for the first time and in January 1957 the coverage was extended to include tonnage of vessels and tons of cargo in and out of non-customs ports. Reports are not required for vessels of less than 15 registered net tons.

2.—Vessels Entered at Canadian Ports, 1952-61

NOTE.—Figures for 1929-51 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	In Foreign Service ¹		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
1952.....	33,782	52,156,098	79,722	56,776,504	113,504	108,932,602
1953.....	34,400	56,589,078	88,675	67,417,391	123,075	124,006,469
1954.....	34,079	54,767,687	84,890	64,291,085	118,969	119,058,772
1955.....	34,432	58,018,365	86,010	67,228,840	120,442	125,247,205
1956.....	35,315	63,105,100	88,640	75,220,366	123,955	138,325,466
1957.....	35,352	66,149,552	104,079	76,535,160	139,431	142,684,712
1958.....	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659
1959.....	33,251	67,526,464	110,702	85,536,408	143,953	153,062,872
1960.....	33,397	74,805,002	120,125	88,493,116	153,522	163,298,118
1961.....	31,832	77,140,524	115,339	91,157,708	147,171	168,298,232

¹ Sea-going and inland international.

3.—Vessels Entered at each of the Principal Canadian Ports, 1961

Province or Territory and Port	In Foreign Service (Sea-going and Inland International)		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
Newfoundland¹	2,131	2,408,297	19,710	10,168,030	21,841	12,576,327
Bell Island.....	123	820,014	73	196,450	196	1,016,464
Corner Brook.....	153	368,283	819	303,341	972	671,624
St. John's.....	775	688,260	607	434,824	1,382	1,123,084
Botwood.....	58	202,637	196	57,005	254	259,642
Port aux Basques.....	59	40,717	953	1,738,334	1,012	1,779,051
Prince Edward Island¹	51	61,912	359	417,854	410	479,766
Charlottetown.....	14	30,450	264	307,351	278	337,801
Nova Scotia¹	4,144	7,484,257	5,526	5,455,156	9,670	12,939,413
Halifax.....	1,460	5,115,734	878	1,190,518	2,338	6,306,252
Sydney.....	152	343,082	807	1,220,078	959	1,563,160
Hantsport.....	201	678,298	4	1,870	205	680,168
Baddeck.....	32	91,271	213	56,804	245	148,075
North Sydney.....	262	46,969	971	1,649,413	1,233	1,696,382
New Brunswick¹	2,840	2,518,457	3,253	1,913,336	6,093	4,731,793
Saint John.....	561	2,328,611	832	1,304,130	1,393	3,632,741
Bathurst.....	16	23,881	112	58,753	128	82,634
Dalhousie.....	67	203,938	13	35,608	80	239,546
Quebec¹	5,592	22,748,243	21,628	19,387,265	27,220	42,135,508
Montreal.....	2,870	10,646,561	3,278	5,488,133	6,148	16,134,694
Sept Iles.....	254	1,893,366	1,244	1,863,298	1,498	3,756,664
Quebec.....	812	3,580,274	1,839	2,834,659	2,651	6,414,933
Sorel.....	179	998,715	625	1,107,697	804	2,106,412
Trois Rivières.....	529	2,153,439	2,373	1,729,738	2,902	3,883,177
Baie Comeau.....	252	1,285,464	1,316	804,896	1,568	2,090,360
Port Alfred.....	359	1,273,543	785	535,714	1,144	1,809,257
Port Cartier.....	27	270,976	40	95,632	67	366,608
Ontario¹	6,364	16,875,642	12,037	21,189,872	18,401	38,065,514
Port Arthur.....	307	1,713,417	813	3,683,613	1,120	5,397,030
Hamilton.....	810	3,789,475	543	1,166,240	1,353	4,955,715
Sault Ste. Marie.....	563	2,288,108	731	1,049,148	1,294	3,337,256
Toronto.....	1,099	2,735,686	1,106	1,879,410	2,205	4,615,096
Port William.....	267	811,201	609	1,987,137	876	2,798,338
Sarnia.....	323	923,176	832	1,609,788	1,155	2,532,964
Port Colborne.....	228	615,798	385	1,073,777	613	1,689,575
Prescott.....	78	155,575	318	883,734	396	1,039,309
Clarkson.....	12	54,404	299	720,233	311	774,637
Kingston.....	73	142,015	434	658,577	507	800,592
Pictou.....	73	107,512	137	508,507	210	616,019
Windsor.....	940	668,392	308	612,058	1,248	1,280,450
Midland.....	37	100,386	82	384,534	119	484,920
Goderich.....	50	141,363	108	304,775	158	446,138
Michipicoten Harbour.....	33	136,815	61	238,840	94	375,655
Thorold.....	96	242,866	233	638,689	379	881,555
Little Current.....	96	275,365	166	130,331	262	405,696
Manitoba—Churchill	54	236,327	18	26,652	72	262,979
British Columbia¹	10,653	24,496,822	52,783	32,568,195	63,436	57,065,017
Vancouver.....	3,520	9,249,651	19,785	13,152,128	23,305	22,401,779
New Westminster.....	750	2,173,188	4,434	1,785,058	5,184	3,958,246
Victoria.....	2,527	5,830,898	2,899	1,411,265	5,426	7,242,163
Powell River.....	221	284,463	2,251	582,382	2,472	866,845
Nanaimo.....	422	1,373,551	5,139	9,240,991	5,561	10,614,542
Port Alberni.....	289	1,175,005	519	219,543	808	1,394,548
Prince Rupert.....	707	619,119	1,031	551,732	1,738	1,170,851
Ocean Falls.....	41	144,030	602	561,215	643	705,245
Chemainus.....	230	594,888	861	537,022	1,091	1,131,910
Duncan Bay.....	63	121,632	656	279,635	719	401,267
Britannia Beach.....	129	111,347	1,120	424,513	1,249	535,860
Quatsino.....	84	319,621	152	86,222	236	405,843
Crofton.....	179	650,921	751	335,491	930	986,412
Kitimat.....	74	353,399	223	103,378	297	456,777
Northwest Territories	3	10,567	25	31,348	28	41,915
Totals	31,832	77,140,524	115,339	91,157,708	147,171	168,298,232

¹ Includes smaller ports not shown separately.

4.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1960 and 1961

Province or Territory and Port	1960			1961		
	Loaded	Unloaded	Total	Loaded	Unloaded	Total
	tons	tons	tons	tons	tons	tons
Newfoundland¹	5,661,840	2,649,071	8,310,911	4,905,463	2,709,526	7,614,989
Bell Island.....	3,147,675	54,003	3,201,678	2,592,900	21,074	2,613,974
Corner Brook.....	435,352	1,032,291	1,467,643	451,390	910,906	1,362,296
St. John's.....	114,097	587,933	702,030	127,990	619,369	747,359
Botwood.....	377,027	140,491	517,518	340,527	175,378	515,905
Port aux Basques.....	32,723	293,744	326,467	34,029	305,569	339,598
Prince Edward Island¹	176,896	432,278	609,174	201,293	544,773	746,066
Charlottetown.....	95,037	350,763	445,800	142,034	381,665	523,696
Nova Scotia¹	9,400,453	5,696,659	15,097,112	9,779,561	5,347,052	15,126,613
Halifax.....	3,962,480	3,641,482	7,603,962	3,842,247	3,663,062	7,505,309
Sydney.....	1,599,715	1,721,968	3,321,683	2,007,876	1,321,364	3,329,240
Hantsport.....	2,189,015	969	2,189,984	2,153,845	503	2,154,348
Baddeck.....	329,399	172	329,571	410,814	115	410,929
North Sydney.....	393,898	28,113	422,011	267,433	22,011	289,444
New Brunswick¹	2,342,627	3,307,582	5,650,209	2,870,964	3,614,072	6,485,036
Saint John.....	1,785,931	2,667,977	4,453,908	2,253,386	2,964,526	5,217,912
Bathurst.....	16,099	283,017	299,116	22,973	269,114	282,087
Dalhousie.....	208,348	5,013	213,361	214,037	13,059	227,096
Quebec¹	27,259,149	23,671,731	50,930,880	29,396,837	27,870,915	57,267,752
Montreal.....	7,345,786	10,542,122	17,887,908	8,461,781	12,511,582	20,973,363
Sept Îles.....	11,091,132	414,960	11,506,092	8,463,919	367,439	8,821,358
Quebec.....	1,045,081	3,185,090	4,230,171	1,169,007	3,571,751	4,740,758
Sorel.....	976,071	1,743,965	2,720,036	1,651,261	2,694,209	4,345,470
Trois Rivières.....	714,083	2,038,332	2,752,415	1,344,998	2,666,219	4,011,217
Baie Comeau.....	726,856	947,604	1,674,460	1,580,217	1,844,574	3,424,791
Port Alfred.....	563,266	3,068,796	3,632,062	464,007	2,477,456	2,941,463
Port Cartier.....	7,407	145,476	152,883	1,334,202	22,221	1,356,423
Ontario¹	23,295,384	31,320,528	54,615,912	26,407,891	31,628,314	58,036,205
Port Arthur.....	8,070,168	250,969	8,327,137	9,286,460	267,755	9,554,215
Hamilton.....	563,462	7,586,561	8,150,023	495,505	7,292,390	7,787,895
Sault Ste. Marie.....	526,419	4,170,918	4,703,337	874,357	4,877,612	5,751,969
Toronto.....	815,111	3,743,963	4,559,074	924,807	4,154,626	5,079,433
Port William.....	2,935,424	843,851	3,779,275	2,955,680	923,936	3,879,616
Sarnia.....	1,768,413	1,526,888	3,295,301	1,958,876	1,203,640	3,162,516
Port Colborne.....	1,492,026	1,111,856	2,603,882	1,652,811	1,311,818	2,964,629
Prescott.....	318,617	782,265	1,100,882	700,008	1,133,947	1,833,955
Clarkson.....	333,026	907,061	1,240,087	601,328	1,016,355	1,617,683
Kingston.....	447,816	837,531	1,285,347	466,316	898,766	1,365,082
Pictou.....	972,668	57,104	1,029,772	1,290,131	74,689	1,364,820
Windor.....	430,891	932,315	1,363,206	330,618	783,526	1,114,144
Midland.....	489	986,567	987,056	16,250	927,448	943,698
Goderich.....	249,708	539,062	788,770	331,468	510,203	841,671
Michipicoten Harbour.....	750,588	111,135	861,723	682,486	57,344	739,830
Thorold.....	205,982	679,539	885,521	220,738	480,372	711,110
Little Current.....	167,215	641,488	808,703	233,669	469,645	703,314
Manitoba²	605,154	72,091	677,245	612,081	53,747	665,828
Churchill.....	605,154	72,091	677,245	612,081	52,924	665,005
British Columbia¹	22,659,437	12,672,645	35,332,082	25,710,072	13,790,103	39,500,175
Vancouver.....	8,784,290	4,271,076	13,055,366	10,614,223	4,419,347	15,033,570
New Westminster.....	2,302,069	1,439,897	3,741,966	2,449,818	1,503,188	3,953,006
Victoria.....	1,088,588	745,515	1,834,103	1,206,604	903,638	2,110,242
Powell River.....	530,029	995,256	1,525,285	504,368	961,680	1,466,048
Nanaimo.....	548,000	448,810	996,810	597,978	750,494	1,348,472
Port Alberni.....	573,206	372,412	945,618	598,145	414,278	1,012,423
Prince Rupert.....	171,274	502,249	673,523	459,240	505,943	965,183
Ocean Falls.....	345,767	576,006	921,773	351,809	574,387	926,196
Chemainus.....	493,582	47,956	541,538	685,938	38,704	724,642
Duncan Bay.....	150,107	373,453	523,565	226,064	452,566	678,630
Britannia Beach.....	600,844	16,480	617,324	507,462	157,152	664,614
Quesno.....	298,499	106,361	404,860	505,751	129,911	635,662
Crofton.....	198,867	394,192	593,059	206,994	403,870	610,864
Kitimat.....	181,310	483,479	614,789	111,239	405,203	516,442
Northwest Territories	2,950	48,865	51,815	19,885	45,371	65,256
Totals	91,403,890	79,871,450	171,275,340	99,904,347	85,603,873	185,508,220

¹ Includes smaller ports not shown separately.² Churchill only for 1960.

The freight movement through a large port takes a number of different forms. These include cargoes loaded for and unloaded from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e., domestic freight moving between Canadian points. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Shipping statistics covering traffic in and out of both customs and non-customs ports are available from 1957. These do not include freight in transit or freight moved from one point to another within the harbour. Table 5 shows the principal commodities loaded and unloaded in foreign and coastwise shipping at the ten ports handling the largest cargo volumes in 1961. These ports handled 59 p.c. of all Canada's international shipping and 42 p.c. of the coastwise trade. The list of commodities used for these statistics was expanded and changed in 1961 to conform with the revised Standard Industrial Classification. The specific commodities shown are those transported in volume and often in bulk form. As the description of such commodities remains unchanged in the revised classification, the effect of the changeover on continuity and comparability is considered to be relatively unimportant.

5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1961

NOTE.—Only commodities totalling over 50,000 tons are listed.

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal—					
Wheat.....	2,142,540	274,198	—	2,411,318	4,828,056
Crude petroleum.....	6,500	2,931,635	13,229	42,416	2,993,780
Fuel oil.....	44,034	805,112	1,949,022	159,194	2,957,362
Coal, bituminous.....	—	441,908	543,567	1,437,110	2,422,585
Gasoline.....	—	85,222	999,516	60,338	1,145,076
Soybeans.....	142,485	109,316	—	73,033	324,834
Sugar.....	332	315,743	—	—	316,075
Gypsum.....	—	5	—	249,385	249,390
Corn.....	36,708	194,887	—	16,277	247,872
Flaxseed.....	66,581	16,607	—	142,684	225,872
Sand and gravel.....	—	75	—	194,400	194,475
Iron ore.....	63,458	98,718	—	27,195	189,371
Iron and steel scrap.....	180,788	—	—	2,411	183,199
Barley.....	6,971	—	—	167,715	174,686
Wheat flour.....	135,298	—	—	—	135,298
Lubricating oils and greases.....	—	25,938	106,648	1,900	134,486
Cement.....	—	2,462	103,763	—	106,225
Chemicals and related products.....	16,459	36,773	10,561	26,222	90,015
Salt.....	658	20,686	—	66,264	87,608
Oats.....	840	359	—	75,306	76,505
Copper, alloyed and unalloyed.....	73,109	127	—	—	73,236
Rye.....	9,175	5,040	—	51,473	65,688
Molasses, crude.....	—	61,197	—	4,223	65,420
Iron and steel—castings, bar, sheet, structural, etc.....	8,212	32,988	14,473	4,468	60,141
Malt.....	1,172	—	—	50,669	51,841
Totals, Commodities Listed.....	2,935,329	5,458,996	3,740,779	5,264,001	17,399,096
Totals, All Commodities.....	4,202,463	6,721,523	4,259,318	5,790,059	20,973,363
Vancouver—					
Wheat.....	3,732,240	672	11	—	3,732,923
Pulpwood.....	520,241	560	1,123,309	232,849	1,876,959
Sand and gravel.....	—	185,542	5,288	1,260,047	1,450,877
Lumber and timber.....	794,283	8,764	21,240	72,842	897,129
Logs, round timber.....	175,036	4,250	18,790	584,853	782,929
Fuel oil.....	26,109	78,116	667,490	1,326	773,041
Hogged fuel.....	241,270	—	412,094	700	654,064
Coal, bituminous.....	456,928	—	10,958	3,285	471,171
Barley.....	413,098	—	—	—	413,098

**5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports
Handling the Largest Tonnages in 1961—continued**

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	
Vancouver—concluded					
Gasoline.....	85,975	8,411	266,737	710	361,833
Limestone.....	—	61	1,000	263,367	264,428
Wood pulp.....	66,834	55	1,210	158,339	226,438
Wheat flour.....	204,048	2,170	18	—	206,236
Flaxseed.....	197,734	—	—	—	197,734
Newsprint paper.....	8,825	—	8,169	162,970	179,964
Chemicals and related products.....	83,759	10,448	71,732	997	166,936
Cement.....	3,347	1,701	4,287	137,564	146,899
Rapeseed.....	132,739	—	—	—	132,739
Iron and steel—castings, bar, sheet, structural, etc.....	6,363	83,094	3,416	1,251	94,124
Salt.....	—	89,482	1,730	—	91,212
Sugar.....	64	70,449	—	—	70,513
Asbestos, unmanufactured.....	25,622	43,568	868	96	70,154
Totals, Commodities Listed.....	7,174,515	587,343	2,618,347	2,881,196	13,261,401
Totals, All Commodities.....	7,554,582	967,086	3,059,641	3,452,261	15,033,570
Port Arthur—					
Wheat.....	303,091	—	5,155,951	806	5,459,848
Iron ore.....	2,058,559	—	303,432	—	2,361,991
Barley.....	172,040	—	549,697	—	721,637
Oats.....	355	—	259,384	—	259,739
Flaxseed.....	22,900	—	79,405	—	102,305
Rye.....	35,804	—	58,985	—	94,789
Hulls, screenings, etc.....	34,679	—	32,478	—	67,157
Malt.....	5,555	—	50,643	—	56,198
Pulpwood.....	55,800	—	—	—	55,800
Totals, Commodities Listed.....	2,688,783	—	6,489,875	806	9,179,464
Totals, All Commodities.....	2,738,838	66,006	6,547,622	201,749	9,554,215
Sept Îles—					
Iron ore.....	7,845,307	—	546,309	—	8,391,616
Fuel oil.....	—	124,486	—	23,262	147,748
Totals, Commodities Listed.....	7,845,307	124,486	546,309	23,262	8,539,361
Totals, All Commodities.....	7,903,160	135,522	560,759	221,917	8,821,358
Hamilton—					
Iron ore.....	384	2,903,519	—	662,414	3,566,317
Coal, bituminous.....	—	2,863,254	—	5,217	2,868,471
Fuel oil.....	9	59,976	—	292,454	352,439
Sand and gravel.....	—	11,372	21,377	78,759	111,508
Iron and steel scrap.....	8,300	76,515	—	—	84,815
Phosphate rock.....	—	12,000	—	53,693	65,693
Soybeans.....	396	59,443	—	—	59,839
Totals, Commodities Listed.....	9,089	5,986,079	21,377	1,092,537	7,109,082
Totals, All Commodities.....	107,928	6,101,350	387,577	1,191,040	7,787,895
Halifax—					
Crude petroleum.....	—	2,435,846	—	—	2,435,846
Fuel oil.....	13,241	384,269	975,895	186,967	1,560,372
Gypsum.....	1,371,751	—	81,077	—	1,452,828
Gasoline.....	3,920	53,093	391,324	158,050	606,387
Wheat.....	430,381	—	—	110,182	540,563
Wheat flour.....	83,477	2	4,732	3,498	91,709
Cement.....	—	288	43	62,362	62,693
Totals, Commodities Listed.....	1,902,770	2,873,498	1,453,071	521,059	6,750,398
Totals, All Commodities.....	2,308,043	3,088,437	1,534,204	574,625	7,505,309

**5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports
Handling the Largest Tonnages in 1961—concluded**

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Sault Ste. Marie—					
Coal, bituminous.....	—	2,107,152	3,800	14,454	2,125,406
Iron ore.....	12,330	1,408,250	—	235,863	1,656,443
Limestone.....	—	449,955	—	—	449,955
Pulpwood.....	1,600	—	130,865	203,625	336,090
Iron and steel—ingot, billet, etc.....	237,955	—	14,836	—	252,791
Pig iron.....	196,498	—	42,542	—	239,040
Sand and gravel.....	6,950	120,035	—	55,993	182,978
Fuel oil.....	10	7,874	—	161,312	169,196
Iron and steel—castings, bar, sheet, structural, etc.....	37,852	128	87,120	490	125,590
Gasoline.....	—	—	—	79,346	79,346
Totals, Commodities Listed.....	493,195	4,093,394	279,163	751,083	5,616,835
Totals, All Commodities.....	532,388	4,106,517	341,969	771,095	5,751,969
Saint John—					
Crude petroleum.....	—	2,109,995	—	—	2,109,995
Fuel oil.....	—	14,153	671,691	227,561	913,405
Wheat.....	528,103	—	—	—	528,103
Gasoline.....	—	—	285,239	113,845	399,084
Sugar.....	1,090	223,796	183	—	225,069
Totals, Commodities Listed.....	529,193	2,347,944	957,113	341,406	4,175,656
Totals, All Commodities.....	1,241,388	2,585,502	1,011,998	379,024	5,217,912
Toronto—					
Coal, bituminous.....	—	1,099,203	7,057	217,723	1,323,983
Fuel oil.....	—	62,357	67,810	443,430	573,597
Wheat.....	—	—	128,647	256,340	384,987
Limestone.....	—	—	240	381,865	382,105
Cement.....	600	—	—	291,365	291,965
Soybeans.....	6,424	250,186	2,985	14,024	273,619
Gasoline.....	—	—	236,188	16,182	252,370
Iron and steel scrap.....	169,515	13,348	400	3,600	186,863
Sand and gravel.....	—	10,621	—	135,964	146,585
Barley.....	—	—	—	142,340	142,340
Sugar.....	—	104,607	—	—	104,607
Salt.....	—	12,000	—	60,385	72,385
Lubricating oils and greases.....	—	38,561	1,400	22,550	62,511
Soybean oil cake and meal.....	57,117	—	—	—	57,117
Totals, Commodities Listed.....	233,656	1,599,883	444,727	1,985,768	4,255,034
Totals, All Commodities.....	346,396	1,918,887	578,411	2,235,739	5,079,433
Quebec—					
Fuel oil.....	3,300	299,455	101,179	668,025	1,071,959
Pulpwood.....	10,581	—	—	1,008,882	1,019,463
Wheat.....	336,551	14,318	—	303,416	654,285
Gasoline.....	—	—	28,053	511,371	539,424
Asbestos, unmanufactured.....	255,652	—	—	—	255,652
Newsprint paper.....	215,241	3	—	—	215,244
Coal, bituminous.....	—	43,552	515	155,319	199,386
Barley.....	—	—	—	140,438	140,438
Pig iron.....	41,000	—	—	42,498	83,498
Oats.....	—	2,632	25	78,411	81,068
Corn.....	—	59,110	—	12,913	72,023
Totals, Commodities Listed.....	862,325	419,070	129,772	2,921,273	4,332,440
Totals, All Commodities.....	933,608	593,539	185,399	2,978,212	4,740,758

Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co-ordination of land and water transportation at many of the ports. Facilities provided to enable interchange movements include the necessary docks and wharves, some for passenger traffic but most of them for freight, warehouses for the handling of general cargo, and special equipment for such bulk freight as lumber, coal, oil and grain. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, dry dock accommodation.

Eight of the principal harbours of Canada are administered by the National Harbours Board. Eleven other harbours come under the supervision of the Department of Transport and are administered by commissions that include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours that are under the direct supervision of the Department of Transport. These harbours are administered under rules and regulations approved by the Governor General in Council. Harbour masters have been appointed by the Minister of Transport for 110 of these harbours, their remuneration being paid from fees levied on vessels under the terms of the Canada Shipping Act.

At most ports, in addition to the harbour facilities operated by the operating authorities, there are dock and handling facilities owned by private companies such as railway, pulp and paper, oil and sugar industries. At several of the ports there are also dry dock facilities.

National Harbours Board.—The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, etc., at the harbours of Halifax, Saint John, Chicoutimi, Quebec, Trois Rivières, Montreal, Vancouver and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier Bridge at Montreal. Current operating revenues and expenditures are given in Table 23, p. 803.

6.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1962

NOTE.—The facilities at these ports include those under the control of other agencies as well as those of the National Harbours Board.

Item	Halifax	Saint John	Quebec	Trois Rivières	Montreal	Vancouver
Minimum depth of approach						
channel..... ft.	51	30	35	35	35	39
Harbour railway..... miles	31	64	23	5	60	75
Piers, wharves, jetties, etc.... No.	88	34	43	21	129	109
Length of berthing..... ft.	35,445	24,550	34,300	9,188	67,384	38,572
Transit-shed floor space.....sq. ft.	1,464,774	938,000	707,000	357,200	3,111,000	1,552,600
Cold storage warehouse capacity.....cu. ft.	1,719,000	900,000	500,000	—	2,900,000	3,633,287
Grain Elevators—						
Capacity..... bu.	4,152,500	3,000,000	6,000,000	9,300,000	22,262,000	21,775,500
Loading rate.....bu. per hr.	90,000	150,000	90,000	55,000	728,000	280,000
Floating crane capacity..... tons	100	65	75	—	90	35
Coal dock storage capacity..... " "	32,000	—	215,000	300,000	1,215,000	—
Oil tank storage capacity..... gal.	206,013,000	41,346,500	150,949,000	11,296,150	1,039,054,590	234,589,227
Electric luffing crane capacity (two).....tons per hr.	—	180	—	—	—	—

Subsection 3.—Canals

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport, together with those under the jurisdiction of the St. Lawrence Seaway Authority, comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

The canals included under the two classifications—Seaway canals and Department of Transport canals—are listed in Table 7 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrew's Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1961, 57,222,696 tons of freight and 25,980 vessels passed through the canals as compared with 52,946,883 tons of freight and 29,629 vessels during 1960. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1961 carried 153,154 passengers as compared with 173,715 in 1960.

7.—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport

Name	Location	Length of Channel	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
Seaway Canals¹						
Main Route—						
South Shore.....	Montreal to Caughnawaga.....	20	2	766	80	30
Beauharnois.....	Melocheville to Lake St. Francis.....	15	2	766	80	30
Iroquois.....	Iroquois Point.....	1	1	766	80	30
Welland.....	Port Weller, Lake Ontario, to Port Colborne, Lake Erie.....	27.60	8	859	80	30
Non-toll—						
Lachine.....	Montreal to Lachine.....	8.74	5	270	45	14
Cornwall (not through canal).....	Cornwall to closure dyke.....	3.50	4	270	43.67	14
Sault Ste. Marie.....	St. Mary's Rapids, Sault Ste. Marie.....	1.38	1	900	60	18.25
Department of Transport Canals						
Atlantic Area—						
Canso Canal.....	Canso Causeway, N.S.....	0.70	1	820	80	28
St. Peter's.....	St. Peter's Bay to Bras d'Or Lakes, Cape Breton, N.S.....	0.50	1	300	47.4	17
Richelieu River—						
St. Ours.....	St. Ours, Que.....	0.12	1	339	45	12
Chambly.....	Chambly to St. Jean, Que.....	11.78	9	120.5	23.25	6.5
Ottawa and Rideau Rivers—						
Ste. Anne.....	Junction of St. Lawrence and Ottawa Rivers.....	0.12	1	200	45	9
Carillon.....	Carillon Rapids, Ottawa River.....	0.50	2	200	45	9
Rideau.....	Ottawa to Kingston.....	123.53	47	134	33	5.5
	Rideau Lake to Perth (Tay Branch).....	6.82	2	134	33	5.5
Lake Ontario to Georgian Bay—						
Trent.....	Trenton to Peterborough lock, Peterborough.....	88.74	18	175	33	8 ²
	Peterborough lock to Swift Rapids.....	135.71	24	134	33	6
	Swift Rapids to Big Chute.....	8.00	—	—	—	4
	Big Chute to Port Severn.....	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch).....	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch).....	25.00	—	—	—	4.5
Murray.....	Isthmus of Murray, Bay of Quinte.....	7.53	—	—	—	8.5 ³

¹ Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley-Dondero canal and two locks near Massena, N.Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities.

² Notice must be given by vessels of more than six-foot draught.

³ With Lake Ontario at elevation of 243 feet.

8.—Traffic through Canadian Canals, by Nationality of Vessel, Navigation Seasons 1952-61

NOTE.—Figures include duplications where vessels pass through two or more canals. Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
1952.....	22,565	25,608,373	3,081	3,686,781	1	1	676	514,224
1953.....	23,378	27,845,139	2,984	3,777,571	1	1	1,201	919,875
1954.....	21,066	25,303,262	3,145	3,245,555	1	1	1,081	893,778
1955.....	22,768	27,709,232	3,950	3,798,290	200	132,858	1,264	1,044,774
1956.....	27,473	31,019,188	3,776	3,675,511	267	186,978	1,349	1,141,259
1957.....	24,191	27,726,358	3,324	3,802,909	332	221,254	1,589	1,364,205
1958.....	21,763	26,635,559	3,216	3,029,624	302	198,926	2,170	1,793,309
1959.....	21,363	28,706,462	4,819	4,233,936	1,125	3,130,140	3,252	7,321,449
1960.....	19,816	28,963,294	5,046	3,660,931	1,303	3,971,587	3,464	9,455,739
1961.....	17,332	32,531,256	3,307	2,515,262	1,845	6,294,753	3,496	10,065,901

1 Included with Canadian vessels.

9.—Freight Traffic through Canadian Canals by Origin of Cargo, Navigation Seasons 1952-61

NOTE.—Figures include duplications where cargoes pass through two or more canals. Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canada		United States		Britain		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1952.....	17,245,051	55.0	14,109,088	45.0	1	1	1	1	31,354,139
1953.....	18,464,479	55.3	14,908,585	44.7	1	1	1	1	33,373,064
1954.....	17,237,542	57.3	12,833,159	42.7	1	1	1	1	30,070,701
1955.....	20,002,540	57.4	14,177,878	40.7	120,827	0.3	572,953	1.6	34,874,198
1956.....	24,698,001	61.7	14,457,217	36.1	106,448	0.3	754,899	1.9	40,016,565
1957.....	21,459,552	57.6	15,021,930	40.3	151,550	0.4	597,317	1.6	37,230,349
1958.....	21,832,526	62.2	12,177,376	34.7	223,059	0.6	863,626	2.5	35,096,587
1959.....	30,829,746	60.4	17,134,694	33.5	326,992	0.6	2,784,700	5.5	51,076,132
1960.....	28,886,228	54.6	20,993,117	39.6	332,794	0.6	2,734,744	5.2	52,946,883
1961.....	31,487,898	55.1	23,175,964	40.5	315,991	0.5	2,242,843	3.9	57,222,696

1 Included with United States.

10.—Tonnage of Products Carried by Canal, classified by Commodity Group,¹ Navigation Season 1961

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Food, Feed, Beverages and Tobacco	Crude Materials, Inedible	Fabricated Materials	End Products, Inedible	Miscellaneous Freight	Total
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	238,380	128,653	538,679	948	234,290	1,140,950
Welland Ship.....	11,482,196	15,395,092	3,827,338	167,535	532,209	31,404,370
St. Lawrence River.....	10,506,424	8,690,143	3,489,953	201,275	785,030	23,672,825
Richelieu River.....	—	11,231	80,453	—	2,845	94,529
St. Peter's.....	1,232	—	—	—	234	1,466
Murray.....	—	740	82	—	—	822
Ottawa River.....	—	196,200	—	777	—	196,977
Rideau.....	—	—	—	—	—	—
Trent.....	—	—	74	—	—	74
St. Andrew's.....	1,342	6,031	759	—	154	8,286
Canso.....	43,891	101,507	544,647	—	12,352	702,397
Totals.....	22,273,465	21,529,597	8,481,985	370,535	1,567,114	57,222,696

1 Grouped according to the revised Standard Industrial Classification.

11.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season 1961

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	From Canadian to Canadian Ports		From Canadian to United States Ports		From United States to United States Ports	
	Up	Down	Up	Down	Up	Down
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	390,734	422,572	6,796	230,240	21,218	3,932
Welland Ship.....	1,301,477	7,651,528	5,037,993	12,228	335,618	686,155
St. Lawrence River.....	2,393,556	6,919,521	4,097,196	—	119,318	71,788
Richelieu River.....	58,000	5,201	22,822	—	—	—
St. Peter's.....	861	605	—	—	—	—
Murray.....	500	322	—	—	—	—
Ottawa River.....	777	196,200	—	—	—	—
Rideau.....	—	—	—	—	—	—
Trent.....	19	55	—	—	—	—
St. Andrew's.....	6,783	1,503	—	—	—	—
Canso.....	479,757	139,427	305	48,760	—	—
Totals.....	4,632,464	15,336,934	9,165,112	291,228	476,154	761,875
	From United States to Canadian Ports		Between other Foreign Ports and United States Ports		Between other Foreign Ports and Canadian Ports	
	Up	Down	Up	Down	Up	Down
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	45,482	13,445	1,515	1,530	2,029	1,457
Welland Ship.....	16,758	10,166,928	886,066	4,459,765	66,740	783,114
St. Lawrence River.....	40,110	2,721,188	875,421	4,454,605	722,636	1,257,486
Richelieu River.....	—	8,506	—	—	—	—
St. Peter's.....	—	—	—	—	—	—
Murray.....	—	—	—	—	—	—
Ottawa River.....	—	—	—	—	—	—
Rideau.....	—	—	—	—	—	—
Trent.....	—	—	—	—	—	—
St. Andrew's.....	—	—	—	—	—	—
Canso.....	9,618	—	—	—	5,860	18,670
Totals.....	111,968	12,910,067	1,763,002	8,915,900	797,265	2,060,727
	Traffic by Direction		Origins of Cargo			Total Cargo
	Up	Down	Canada	United States	Other Countries	
	tons	tons	tons	tons	tons	
Sault Ste. Marie.....	467,774	673,176	1,051,799	85,607	3,544	1,140,950
Welland Ship.....	7,644,652	23,759,718	14,786,340	15,665,224	952,806	31,404,370
St. Lawrence River.....	8,248,237	15,424,588	14,667,759	7,407,009	1,598,057	23,672,825
Richelieu River.....	80,822	13,707	86,023	8,506	—	94,529
St. Peter's.....	861	605	1,466	—	—	1,466
Murray.....	500	322	822	—	—	822
Ottawa River.....	777	196,200	196,977	—	—	196,977
Rideau.....	—	—	—	—	—	—
Trent.....	19	55	74	—	—	74
St. Andrew's.....	6,783	1,503	8,286	—	—	8,286
Canso.....	495,540	206,857	688,352	9,618	4,427	702,397
Totals.....	16,945,965	40,276,731	31,487,898	23,175,964	2,558,834	57,222,696

12.—St. Lawrence—Great Lakes Traffic using St. Lawrence, Welland Ship and Sault Ste. Marie Canals, 1961

NOTE.—Duplications eliminated wherever possible.

Canals Used	Up-bound Freight	Down-bound Freight	Total
	tons	tons	tons
Traffic using Canadian St. Lawrence—Great Lakes System.....	10,641,772	26,917,107	37,558,879
St. Lawrence and Ottawa.....	777	198,027	198,804
St. Lawrence only.....	2,642,825	2,390,531	5,033,356
St. Lawrence and Welland Ship.....	5,578,107	12,779,239	18,357,346
St. Lawrence, Welland Ship and Sault Ste. Marie.....	26,082	57,149	83,231
Welland Ship only.....	1,952,289	10,876,134	12,828,423
Welland Ship and Sault Ste. Marie.....	88,174	47,196	135,370
Sault Ste. Marie only.....	353,518	568,831	922,349
Traffic using United States Locks at Sault Ste. Marie only.....	9,085,994	70,804,144	79,890,138
Totals.....	19,727,766	97,721,251	117,449,017

Traffic through the Sault Ste. Marie canals, Canadian and United States, has fluctuated between a high of 128,489,000 tons reached in 1953 and a low of 70,906,000 tons in 1959. A rise to 91,775,000 tons in 1960 was followed by a decline to 81,038,000 tons in 1961. The dominant traffic from a tonnage aspect is iron ore which also reached its highest point in 1953 at 98,658,000 tons, decreasing to 47,214,000 tons in 1959, rising to 67,939,000 tons in 1960 and dropping again to 55,919,000 tons in 1961. Soft coal has usually been second in volume to iron ore with a tonnage ranging from 13,301,000 tons in 1950 to a low of 6,389,000 in 1958. Although in the past wheat was generally third in tonnage, during the four years 1958-61 wheat remained in second place with tonnages of 7,478,000, 7,496,000, 7,611,000 and 10,177,000, respectively. Other grains usually range between 40 p.c. and 60 p.c. of the wheat tonnage but declined to 28 p.c. in 1961.

Canadian use of the Panama Canal.—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of 3,887,000 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1962 and passing through the Panama Canal, only 26,000 long tons were destined for Eastern Canadian ports. Similarly, of the 960,000 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 16,000 long tons were destined for Western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 525,621 long tons in the year ended June 30, 1962; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 584,399 long tons.

Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. A special article carried in the 1956 edition (pp. 821-829) gives detailed information on Great Lakes—St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and another special article carried in the 1960 Year Book (pp. 851-860) covers the story of the Seaway, its new facilities and services and the movement of freight during the second year of its operation.

The St. Lawrence Seaway Authority, constituted as a Corporation by Act of Parliament in 1951 (RSC 1952, c. 242), undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow 27-foot navigation, concurrently with the construction of similar facilities in the International Rapids

Section of the St. Lawrence River by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on Apr. 1, 1959 and officially opened on June 26, 1959. With the opening of the Seaway, certain ancillary canals were transferred to the jurisdiction of the St. Lawrence Seaway Authority for operation and maintenance purposes. These include the Lachine, a section of the Cornwall Canal, a portion of the third Welland Canal and the Canadian locks at Sault Ste. Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Subsection.

Tables 13 and 14 give combined traffic statistics of the St. Lawrence and Welland Canals for the year 1962. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway. On this basis, 4,816 ships carrying more than 13,245,000 tons of cargo moved upbound through the Seaway in 1962 and 4,815 vessels carrying 26,400,000 tons moved downbound. Ocean-going ships carried 22.9 p.c. of the total cargoes, lakers 77.0 p.c. and other craft 0.1 p.c. There is still evident an imbalance of loading, 48.6 p.c. of the gross registered tonnage of all vessels upbound being in ballast compared with only 16.6 p.c. of the vessels downbound. Of the total tonnage carried upbound in 1962, 11,119,000 tons were domestic cargo and 2,127,000 foreign traffic; downbound, 20,241,000 tons were domestic freight and 6,159,000 tons were carried to and from foreign ports.

13.—Summary Statistics of St. Lawrence Seaway Traffic, 1962

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Item	Upbound			Downbound		
	No. of Transits	Gross Tons	Cargo Tons	No. of Transits	Gross Tons	Cargo Tons
Type of Vessel						
Ocean—						
Cargo.....	1,114	6,244,689	2,285,194	1,092	6,102,134	6,050,513
Tanker.....	69	581,401	365,876	68	571,024	364,769
Laker—						
Cargo.....	2,578	15,662,738	8,883,669	2,568	16,201,688	18,945,150
Tug and barge.....	243	250,179	229,192	235	246,238	368,115
Tanker.....	500	1,342,793	1,481,908	531	1,395,484	627,599
Other craft.....	312	127,386	7	321	199,241	43,531
Totals.....	4,816	24,209,186	13,245,846	4,815	24,715,809	26,399,677
Type of Cargo						
Bulk.....	1,599	8,206,710	11,231,296	2,885	17,433,691	23,899,806
General.....	488	2,093,430	952,441	107	436,888	224,695
Mixed.....	482	2,093,941	1,062,109	622	2,716,029	2,275,176
Passenger ²	134	40,121	—	134	23,333	—
In Ballast—						
Ocean.....	311	2,387,474	—	44	336,056	—
Laker.....	1,622	9,272,628	—	851	3,660,349	—
Other.....	180	114,882	—	172	109,463	—
Type of Traffic						
Domestic—						
Canada to Canada.....	1,654	6,212,138	2,832,601	1,837	8,161,351	7,508,571
Canada to United States.....	1,686	11,585,167	7,922,620	12	46,763	21,984
United States to Canada.....	15	46,058	16,402	1,429	9,588,405	11,967,416
United States to United States.....	434	826,144	347,364	416	547,611	742,686
Foreign—						
Canada—						
Import.....	167	995,763	495,882	—	—	—
Export.....	—	—	—	169	936,364	697,427
United States—						
Import.....	860	4,543,916	1,630,977	—	—	—
Export.....	—	—	—	952	5,435,315	5,461,593

¹ Includes naval vessels.

² Upbound passengers in all types of vessel numbered 4,847 and downbound

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1962

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Commodity	Cargo Tons	P.C. of Total	Commodity	Cargo Tons	P.C. of Total
Agricultural Products	13,598,966	34.3	Forest Products	325,060	0.8
Wheat.....	6,102,667	15.4	Pulpwood.....	189,514	0.5
Corn.....	2,617,882	6.4	Other forest products.....	135,546	0.3
Barley.....	1,300,353	3.3	Manufactures and		
Soybeans.....	1,147,329	2.9	Miscellaneous	6,596,659	16.6
Oats.....	742,866	1.9	Fuel oil.....	1,831,095	4.6
Rye.....	402,563	1.0	Iron and steel, manufactured.....	706,969	1.8
Flaxseed.....	339,981	0.8	Newsprint.....	491,770	1.2
Soybean oil cake and meal.....	254,056	0.6	Scrap iron and steel.....	289,557	0.7
Flour, wheat.....	242,935	0.6	Gasoline.....	274,838	0.7
Beans and peas.....	180,759	0.4	Lubricating oils and greases.....	231,653	0.6
Malt.....	62,390	0.2	Food products.....	212,960	0.5
Other agricultural products.....	325,185	0.8	Sugar.....	192,829	0.5
Animal Products	315,752	0.8	Chemicals.....	160,298	0.4
Packing house products, edible..	69,177	0.2	Pig iron.....	159,360	0.4
Hides, skins and pelts.....	54,656	0.1	Cement.....	147,976	0.4
Other animal products.....	191,919	0.5	Syrup and molasses.....	138,471	0.4
Mineral Products	17,956,914	45.4	Sodium products.....	135,661	0.3
Iron ore.....	10,238,743	25.8	Iron and steel, nails, wire.....	119,966	0.3
Bituminous coal.....	5,417,826	13.7	Petroleum products, other.....	106,313	0.3
Stone, ground or crushed.....	1,023,829	2.6	Tar, pitch and creosote.....	100,378	0.3
Salt.....	272,872	0.7	Rubber, crude, natural, synthetic	93,889	0.2
Coke.....	220,208	0.6	Wood pulp.....	92,875	0.2
Gravel and sand.....	118,374	0.3	Machinery and machines.....	87,928	0.2
Petroleum, crude.....	101,872	0.3	Other manufactures and miscel-		
Clay and bentonite.....	93,219	0.2	laneous	1,021,873	2.6
Phosphate rock.....	84,039	0.2	Package Freight	852,172	2.1
Sulphur.....	65,506	0.2	Package freight—domestic.....	823,165	2.0
Aluminum ore and concentrates..	52,047	0.1	Package freight—foreign.....	29,007	0.1
Other mineral products.....	268,379	0.7	Totals	39,645,523	100.0

On the Montreal-Lake Ontario Section, upbound freight increased 32.1 p.c. in 1962 compared with 1961 but downbound traffic decreased by 3.1 p.c. This increase in upbound traffic was accounted for almost entirely by the volume of iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie. The number of transits were 275 fewer upbound and 266 fewer downbound in 1962 than in 1961, indicating a slight increase in the size of vessel using this portion of the Seaway and in the volume of cargo carried. Bulk cargo comprised 90.2 p.c. of the total traffic through the Section for 1962, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, bituminous coal and barley. Traffic patterns show that 30.3 p.c. of the total movement was between two Canadian ports, 36.9 p.c. moved between Canadian and United States ports and 32.2 p.c. consisted of foreign trade to and from Canada and the United States.

In the Welland Canal there were 7,615 transits in 1962 with a cargo volume of 10,843,000 tons upbound and 21,563,000 tons downbound; bulk cargo accounted for 94.1 p.c. of the traffic. Although many vessels pass through both the St. Lawrence and the Welland Canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely iron ore, grain and coal. The Welland Canal traffic was nearly 9,813,000 cargo tons greater than that reported for the Montreal-Lake Ontario Section.

Income of the St. Lawrence Seaway Authority for 1962 amounted to \$10,691,922, comprising toll revenue of \$8,914,380 assessed for transits through the Seaway locks between Montreal and Lake Ontario, \$641,261 for transits through the Welland Canal to July 1 when tolls were suspended, together with sundry revenues (rentals, wharfage,

bridge revenue, etc.) amounting to \$1,136,281. Operating and maintenance expenses amounted to \$5,911,284 and administrative expenses were \$1,759,721, making a total of \$7,671,005, excluding an amount of \$324,432 for non-toll canals. Other financial statistics are given in Section 2, pp. 802-803.

Pleasure craft locked through the Montreal-Lake Ontario Section canals numbered 335 upbound and 402 downbound in 1962, and those locked through the Welland Canal numbered 95 upbound and 127 downbound.

Subsection 5.—Marine Services of the Federal Government

The services covered in this Subsection deal with the Canadian Coast Guard and aids to navigation, including the maintenance of the St. Lawrence River Ship Channel, steamship inspection and pilotage service.

Canadian Coast Guard.—The Canadian Coast Guard, known by that name only since January 1962, has played a vital part in Canada's maritime economic and industrial development since Confederation. At that time several previously established government marine organizations were brought together as a single marine service, founding the fleet that became the responsibility of the Department of Transport when it was established in 1936.

From a small beginning, the fleet has expanded into an organization consisting of nearly 200 vessels of all types, of which nearly 50 are of a larger size. Of these, 28 measure more than 1,000 tons gross. They include 10 fully strengthened icebreakers and eight lighthouse supply-and-buoy ships with icebreaking capabilities. These vessels comprise in numbers the world's second largest icebreaking force. The greater part of the fleet's expansion has occurred within the past few years to meet a new and fast-growing requirement for icebreaker support of shipping activities in the Canadian Arctic during the summer and for commercial shipping in the Gulf of St. Lawrence in the winter.

The Department's concern with marine search-and-rescue activities has also increased, not only in the field of commercial shipping but also in connection with the mushrooming public interest in pleasure boating with its attendant safety problems.

The duties of the Canadian Coast Guard are civilian in nature and no armaments are carried on the ships. It maintains and supplies shore-based and floating aids to navigation in Canadian waters, including the Atlantic and Pacific coastal areas, the St. Lawrence River and Great Lakes, the channels of both the eastern and western Arctic, Hudson Bay, the Mackenzie River system and other inland waters. The territory covered is vast and the duties involved are extensive.

Since its beginning, the fleet has carried out icebreaking as one of its important undertakings. In its earliest years, such work was done mainly to aid shipping in eastern port areas and in the St. Lawrence for whatever winter period was allowed by weather conditions and the limitations of ships of that area. Icebreaking has also been carried out through the years at Montreal to prevent floods caused by ice jams in the river. When the development of the sea route from Churchill, Man., to Europe became a factor in the country's maritime economy, icebreaker assistance was extended to commercial shipping using that route. Since 1954, as a result of the opening up of the Canadian Arctic, the Department has handled all icebreaker requirements in these waters, extending to within a few hundred miles of the North Pole.

Arctic operations necessitate ice reconnaissance services, which are carried out by fixed wing aircraft flying out of such ports as Churchill, Man., and Frobisher Bay and

Resolute Bay in the High Arctic. These flights are under the direction of the Department's Meteorological Branch and provide information on ice conditions in the sea lanes in all areas where the convoys operate. Helicopters, based aboard the icebreakers, are used for close-range reconnaissance. They carry trained observers provided by the Meteorological Branch and their ability to spot leads through the ice, which cannot be seen from the ship, has resulted in tremendous savings in time for the convoys. The helicopters are also extremely useful in ship-to-shore personnel movements and for carrying light freight.

As an indication of the growth of Arctic re-supply operations handled by the Canadian Coast Guard, the total tonnage in 1954 was approximately 8,000 and the annual figure is now in the vicinity of 100,000 tons.

Aids to Navigation.—Included under aids to navigation are the lighthouses and the whole system of marine danger signals on the East and West Coasts of Canada, on Hudson Bay and Strait, the St. Lawrence River and Gulf, the Mackenzie River and Arctic passages, and the inland rivers and lakes—a very extensive system designed to provide safe navigation in all Canadian waters. In addition, a pilotage service is maintained in waters where navigation is difficult; this service is described at p. 799. A further aid to safe navigation is found in the chains of radio signal and direction-finding stations described in the 1962 Year Book pp. 848-849. Lists of aids to navigation, with the exception of very minor ones, are published by the Department of Transport.

15.—Marine Danger Signals Maintained in Canada, Years Ended Mar. 31, 1961 and 1962

NOTE.—In addition to the aids to navigation listed, approximately 10,400 unlighted buoys, balises, dolphins and beacons are maintained. Lists of marine danger signals maintained from 1929 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Type of Signal	1961	1962	Type of Signal	1961	1962
	No.	No.		No.	No.
Lights.....	3,054	3,196	Mechanical bells and gongs.....	18	17
Lightships.....	3	3	Hand fog horns and bells.....	85	84
Light-keepers.....	903	953	Lighted and combination lighted whistling and bell buoys.....	1,324	1,384
Fog whistles and sirens.....	45	46	Unlighted bell and whistling buoys...	136	121
Diaphones and tyfons.....	270	277	Explosive signals.....	3	4

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels. Icebreaking operations are continuous throughout the winter.

St. Lawrence Ship Channel.—This channel extends from about 40 miles below Quebec City to the foot of the Lachine Canal at Montreal, a distance of 200 miles. About 130 miles of this distance is dredged channel.

Above Quebec the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet, with additional width up to 1,500 feet at all curves and difficult points, and additional anchorage and turning areas. Widening of the channel to a minimum width of 800 feet, commenced in 1952, is about half completed. This section com-

comprises about 115 miles of dredged channel. Below Quebec the limiting depth of dredged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The ship channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early December. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway from Fame Point, Que., to Kingston, Ont., are recorded and made available to all concerned through a series of reporting stations known as the Marine Reporting Service.

16.—Seasons of Open Navigation on the St. Lawrence Ship Channel, 1953-62

Note.—Figures from 1882 are given in the corresponding table of previous Year Books beginning with the 1934-35 edition.

Year	Channel Open, Quebec to Montreal ¹	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour	Year	Channel Open, Quebec to Montreal ¹	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour
1953.....	Mar. 30	Apr. 2	Dec. 21	1958.....	Apr. 6	Mar. 30	Dec. 23
1954.....	Apr. 15	Mar. 30	" 15	1959.....	" 13	Apr. 1	" 20
1955.....	" 17	Apr. 5	" 16	1960.....	" 14	Mar. 21	" 16
1956.....	" 13	" 2	" 17	1961.....	" 11	" 27	" 22
1957.....	" 8	" 4	" 18	1962.....	" 15	" 12	" 19

¹ "Channel Open" means the route can be navigated although there may be floating ice in the river.

Steamship Inspection.—The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the approval of design of the hulls, machinery and equipment of ships; inspection during construction; periodic inspection and the issue of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; and the certification of marine engineers. The Board also looks after the interests of the Federal Government in schools for marine engineers.

The Chairman and the Board of Steamship Inspection are located at Ottawa and field offices are maintained in the principal ocean and inland ports. A total of 1,743 vessels of Canadian ownership or registry and 52 vessels registered or owned elsewhere were inspected during the year ended Mar. 31, 1962 compared with 1,668 and 28 vessels, respectively, in the previous fiscal year.

Pilotage.—Pilotage service functions under the provisions of Part VI and Part VIA of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 23 pilotage districts, in 10 of which the Minister of Transport is the pilotage authority (see Table 17); in each of the other districts the authority is a local body appointed by the Governor in Council. There are also three districts that are administered jointly by Canada and the United States.

17.—Pilotage Service, by Pilotage District, 1961 and 1962

District	1961		1962	
	Pilotage Trips	Net Registered Tonnage	Pilotage Trips	Net Registered Tonnage
	No.		No.	
Bras d'Or Lakes, N.S.	224	595,240	230	774,415
Sydney, N.S.	2,108	6,213,612	1,873	5,711,694
Halifax, N.S.	3,374	12,630,448	3,591	14,370,845
Saint John, N.B.	1,576	6,134,417	1,499	5,759,618
Quebec, Que.	7,404	31,834,229	7,538	33,239,991
Montreal, Que.	10,535	38,944,901	9,067	40,466,625
Cornwall, Ont.	2,606	8,202,378	2,646	8,800,086
Kingston, Ont.	2,806	8,976,394	3,193	20,272,318
Churchill, Man.	139	260,996	143	304,140
British Columbia.	6,370	30,952,650	8,669	32,217,850
Totals	37,142	144,745,265	38,449	161,917,582

In addition there are known to be five districts in Newfoundland under the local pilotage authority. These districts continued to be administered under Newfoundland statutes after union with Canada (Mar. 31, 1949). Part VI of the Canada Shipping Act with respect to pilotage has not been proclaimed in force in Newfoundland.

Section 2.—Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government. Capital expenditure by municipalities and private capital expenditure are confined almost entirely to terminal or dockage facilities. On the other hand, most of the investment in shipping has come from private sources. No figures are available regarding private investment in shipping except those appearing in the reports of the operating companies that cover only a portion of the field. There are no statistics showing the revenue of ship operators from passenger and freight traffic.

Capital Expenditure.—The only figures available of federal capital expenditure on Canadian waterways are those contained in the *Public Accounts* and the annual reports of the Departments of Transport, Public Works and Finance and in the annual report of the St. Lawrence Seaway Authority. It must be realized that such expenditure cannot be regarded as an accurate indication of the present worth of the undertakings represented. The cost of building canals and other waterways and permanent works to facilitate water transportation in Canada is represented in such reports at their original book values, no deductions having been made from the cumulative totals for depreciation from year to year or for abandonment of works that have been superseded, such as, for example, the first Welland canals and the now flooded St. Lawrence River canals. To this extent, such figures are an over-statement of the present value of the works in use. The figures are further limited by the fact that they do not include the cost of maintenance and improvements or the operation of these works, such charges having been made to the consolidated deficit account as annual expenditure and not to capital account. Thus, such capital expenditure on waterways is not included in this publication, with the exception of that made by the National Harbours Board on facilities under its jurisdiction. Capital values of the fixed assets administered by the Board are shown as at Dec. 31, 1961 and 1962 in Table 18. These figures include all buildings, machinery and durable plant improvements and have been subject to deductions for depreciation and the scrapping or abandonment of plant and therefore represent a fair approximation of the present value of the properties.

18.—Capital Values of Fixed Assets Administered by the National Harbours Board, as at Dec. 31, 1961 and 1962

NOTE.—Compiled from the annual reports of the National Harbours Board.

Item	1961	1962	Item	1961	1962
	\$	\$		\$	\$
Harbour dredging.....	21,143,320	22,479,039	Harbour buildings, service plants and equipment.....	10,271,342	10,427,200
Land and land improvements..	16,593,093	16,834,978	Floating and shore equipment.....	4,381,875	5,263,366
Wharves and piers.....	134,839,648	145,980,838	Jacques Cartier Bridge.....	21,943,943	22,278,639
Permanent sheds.....	37,676,472	38,527,859	Champlain Bridge.....	—	31,872,634
Railway systems.....	6,707,355	6,639,753	Works under construction.....	36,749,078	13,197,964
Grain elevator systems.....	71,367,378	71,997,900			
Cold storage systems.....	6,646,778	6,714,210	Totals.....	368,320,257	392,214,380

The total amount advanced by the Federal Government to the National Harbours Board for capital expenditure during 1961 was \$19,001,935, distributed as follows: Saint John, N.B., \$838,585; Quebec, Que., \$2,144,361; Montreal, Que., \$13,797,462; and Churchill, Man., \$2,221,527. The total for 1962 was \$19,709,613, distributed as follows: Saint John, N.B., \$3,344,844; Quebec, Que., \$123,341; Montreal, Que., \$8,757,431; Churchill, Man., \$1,838,674; and Champlain Bridge (Montreal), \$5,645,323.

Waterways Expenditure and Revenue on Consolidated Fund Account.—Expenditure under this heading (Tables 19 to 21) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport, the Department of Public Works and the St. Lawrence Seaway Authority is shown in Table 22.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 24. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 23.

19.—Department of Transport Expenditures on Marine Service, charged to Consolidated Deficit Account, Years Ended Mar. 31, 1961 and 1962

Service	1961	1962	Service	1961	1962
	\$	\$		\$	\$
Administration, including agencies.....	998,400	1,119,409	Marine Regulations Branch—Steamship Inspection Division.....	1,084,067	1,115,769
Marine Works Branch—Aids to Navigation Division—			Nautical and Pilotage Division—		
Administration, operation and maintenance.....	7,497,814	6,660,497	Nautical Services.....	553,754	471,409
Construction.....	2,630,403	4,513,003	Pilotage Services—		
River St. Lawrence Ship Channel Division—			Administration, operation and maintenance.....	1,563,174	1,624,693
Administration, operation and maintenance.....	1,404,605	1,833,451	Construction.....	134,676	480,456
Canals Division—			Pensions to former pilots..	1,346	1,200
Administration, operation and maintenance.....	2,259,712	2,311,914	Marine reporting service..	156,537	136,472
Construction.....	925,585	1,200,978	Marine Operations Branch—		
Operating deficit and capital requirements of canals and works entrusted to the St. Lawrence Seaway Authority.....	2,315,389	2,590,573	Administration, operation and maintenance.....	18,284,939	18,973,407
			Totals.....	39,810,401	43,033,231

20.—Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges) charged to Consolidated Fund Account, Years Ended Mar. 31, 1961 and 1962

NOTE.—Compiled from the annual reports of the Department concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 23.

Year and Province or Territory	Dredging ¹	Con- struction	Improvements and Repairs	Staff and Sundries	Total
	\$	\$	\$	\$	\$
1961					
Newfoundland.....	556,715	6,813,869	377,690	98,593	7,346,867
Prince Edward Island.....	321,991	656,797	142,808	376,940	1,498,536
Nova Scotia.....	445,253	3,569,509	516,905	90,506	4,622,173
New Brunswick.....	842,462	2,644,040	225,101	23,932	3,735,535
Quebec.....	726,432	5,867,025	1,151,160	298,834	8,043,451
Ontario.....	757,919	8,122,588	445,774	63,372	9,389,653
Manitoba.....	212,925	198,373	74,653	87,240	573,191
Saskatchewan.....	—	—	3,557	—	3,557
Alberta.....	193,681	28,983	3,465	5,774	231,903
British Columbia.....	1,307,343	2,224,530	462,218	2,220,091	6,214,182
Yukon and Northwest Territories.....	86,253	82,607	10,703	83,564	263,127
Canada, 1961.....	5,450,974	29,708,321	3,414,034	3,348,846	41,922,175
1962					
Newfoundland.....	474,105	6,283,743	328,901	460,220	7,546,969
Prince Edward Island.....	408,758	570,964	185,043	77,853	1,242,618
Nova Scotia.....	651,682	2,471,847	535,753	6,576	3,665,858
New Brunswick.....	877,599	1,944,150	301,591	114,005	3,237,345
Quebec.....	770,971	4,080,036	948,519	380,161	6,179,687
Ontario.....	696,857	11,933,064	595,506	144,457	13,369,884
Manitoba.....	215,966	1,075,715	46,362	90,008	1,428,051
Saskatchewan.....	—	21,765	2,229	—	23,994
Alberta.....	295,729	17,635	33,330	272,970	619,664
British Columbia.....	1,226,647	1,228,413	482,239	1,262,314	4,199,613
Yukon and Northwest Territories.....	—	70,182	19,282	1,423	90,887
Canada, 1962.....	5,618,314	29,697,514	3,478,755	2,809,987	41,604,570

¹ Includes expenditures for dredging plants.

21.—St. Lawrence Seaway Authority Expenditures charged to Consolidated Deficit Account, 1961 and 1962

Item	1961	1962	Item	1961	1962
	\$	\$		\$	\$
Administration.....	1,616,737	1,759,721	Maintenance Expenses—con- cluded		
Operating Expenses—			Canal lands and roads.....	152,253	166,116
Channels, canals and locks...	1,684,172	1,611,288	Power transmission lines and canal lighting.....	85,669	84,288
Bridges.....	511,041	512,161	Other.....	94,757	61,027
Grants in lieu of municipal taxes.....	353,142	360,374	Operating and maintenance super- vision.....	1,071,181	1,232,498
Miscellaneous.....	54,243	107,744			
Maintenance Expenses—			Totals.....	7,018,133	7,671,005
Channels, canals and locks...	768,373	1,149,710			
Bridges and tunnel.....	527,088	564,159			
Dredging and aids to naviga- tion.....	99,477	61,919			

22.—Federal Government Revenue in connection with Waterways, Years Ended Mar. 31, 1961 and 1962

NOTE.—Compiled from annual reports of the Department of Transport, the *Public Accounts* and the annual reports of the St. Lawrence Seaway Authority.

Department and Item	1961	1962	Department and Item	1961	1962
\$	\$		\$	\$	
Department of Transport			Department of Public Works		
Marine Services	8,188,380	5,172,578	Earnings of Dry Docks	351,094	389,499
Canals.....	312,010	357,952	Champlain Dock, Lauzon.....	139,223	158,763
Fines and forfeitures.....	11,053	3,660	Lorne Dock, Lauzon.....	36,638	58,458
Steamship inspection.....	161,549	168,659	Esquimalt new dock.....	172,912	160,926
Wharf revenue.....	715,150	778,477	Selkirk repair slip.....	2,321	5,352
Harbour dues.....	173,892	203,321			
Measuring surveyor's fees.....	1,210	2,344			
Examinations—masters' and mates' fees.....	8,935	14,010	Works and Plants Leased	91,540	35,908
Pilots' licence fees (pilottage).....	386	360	Kingston dry dock.....	12,100	12,100
Pilotage fees.....	575,382	650,063	Ferry privileges.....	336	681
Pilot boat fees.....	237,930	250,637	Dredges and plants.....	79,104	23,127
Shipping fees.....	16,867	15,169			
Marine steamer earnings.....	5,732,976	2,373,247	Rents from water lots, etc.....	74,664	75,640
Signal station dues.....	1,352	—	Refunds of expenditure reported in previous years.....	1,180,263	449,873
Rentals—water lots and lighthouse sites.....	39,608	42,751	Sundry receipts, test borings, etc.....	210	850
River St. Lawrence Ship Channel Service.....	—	15,665			
Sale of land, buildings, etc.....	7,434	70,993	Totals, Department of Public Works	1,697,771	951,770
Merchant seamen's identity certificates.....	1,035	807			
Miscellaneous.....	61,180	111,898	St. Lawrence Seaway Authority		
Refunds previous year's expenditures.....	62,554	40,546	Tolls assessed.....	9,548,303	9,555,641
Port Warden fees.....	67,877	72,019	Rentals.....	593,699	612,598
Board of Transport Commissioners	2,322	2,518	Wharfrage.....	150,550	177,668
Air Transport Board	36	—	Miscellaneous.....	154,704	346,015
Totals, Department of Transport	8,190,738	5,175,096	Totals, St. Lawrence Seaway Authority	10,447,256	10,691,922

23.—Operating Revenue and Expenditure of Harbours, Elevators and Bridges under the National Harbours Board, 1961 and 1962

Harbour and Year	Operating Revenue	Operating Expenditure	Net Operating Income	Harbour and Year	Operating Revenue	Operating Expenditure	Net Operating Income
\$	\$	\$	\$	\$	\$	\$	\$
Halifax—				Jacques Cartier Bridge (Montreal)—			
1961.....	2,131,170	1,995,993	135,177	1961.....	3,497,975	777,422	2,720,553
1962.....	2,139,617	2,046,045	93,572	1962 ¹	1,493,654	486,324	1,007,330
Saint John—				Champlain Bridge (Montreal)—			
1961.....	1,000,072	933,603	66,469	1962 ²	162,574	181,833	—19,259
1962.....	928,052	940,511	—12,459	Prescott Elevator—			
Chicoutimi—				1961.....	1,009,170	501,760	507,410
1961.....	130,844	53,656	77,188	1962.....	928,272	475,313	452,959
1962.....	132,103	33,754	98,349	Port Colborne Elevator—			
Quebec—				1961.....	549,814	309,359	240,455
1961.....	2,683,436	1,885,188	798,248	1962.....	424,357	252,474	171,883
1962.....	2,575,449	2,058,405	517,044	Churchill—			
Trois Rivières—				1961.....	1,190,550	1,144,635	45,915
1961.....	691,834	108,399	583,435	1962.....	1,419,221	1,126,763	292,458
1962.....	699,366	118,022	581,344	Vancouver—			
Montreal—				1961.....	4,559,611	2,665,473	1,894,138
1961.....	11,573,819	7,667,979	3,905,840	1962.....	4,529,828	2,661,899	1,867,929
1962.....	11,285,893	7,971,152	3,314,741				

¹ Tolls removed June 1, 1962.

² Commenced operations June 29, 1962.

Shipping Subsidies.—Table 24 shows the net amount of steamship subventions paid in connection with contracts made for the maintenance of essential coastal and inland water shipping services. The payment of these subventions is administered by the Canadian Maritime Commission under statutory authority.

24.—Steamship Subventions, Years Ended Mar. 31, 1962 and 1963

Services	1962	1963
	\$	\$
Western Local Services—		
Gold River and Zeballos, B.C.	—	12,000
Vancouver and Northern British Columbia ports, B.C.	300,000	300,000
Vancouver and West Coast of Vancouver Island, B.C.	88,000	88,000
Eastern Local Services—		
Baddeck and Iona, N.S.	17,500	17,500
Campobello, N.B., and Lubec, Maine, U.S.A.	9,600	5,950
Cross Point, Que., and Campbellton, N.B.	58,750	—
Delhousie, N.B., and Miguasha, Que.	27,500	27,500
Father Point and Baie Comeau, Que.	300,000	600,000
Grand Manan and the mainland, N.B.	95,000	101,500
Halifax, Canso, Guysborough and Isle Madame, N.S.	30,000	30,000
Île aux Coudres and Les Éboulements, Que.	33,000	33,000
Île aux Grues and Montmagny, Que. (summer)	5,000	6,500
Île aux Grues and Montmagny, Que. (winter)	1,700	1,700
Magdalen Islands, Que., Cheticamp and Halifax, N.S.	30,000	23,000
Mulgrave and Canso, N.S.	52,400	52,400
Mulgrave, Queensport and Isle Madame, N.S.	31,250	31,250
Murray Bay and North Shore of St. Lawrence (winter)	35,000	35,000
Owen Sound and ports on Manitoulin Island and Georgian Bay, Ont.	100,000	100,000
Pele Island and the mainland, Ont.	83,134	80,352
Pictou, N.S., Charlottetown and Souris, P.E.I., and the Magdalen Islands, Que.	298,000	298,000
Portugal Cove and Bell Island, Nfld.	274,385	150,200
Prince Edward Island and Newfoundland	72,000	72,000
Prince Edward Island and Nova Scotia	560,629	617,000
Prince Edward Island and North Shore of St. Lawrence River, Que.	42,500	42,500
Quebec, Natashquan and Harrington, Que.	492,923	430,000
Rimouski, Matane and ports on North Shore of St. Lawrence River, Que.	217,522	161,500
Rivière du Loup and St. Siméon, Que.	21,000	21,000
St. Lawrence River and Gaspé ports to Chandler, Que.	45,000	45,000
Saint John, N.B., Tiverton, Freeport, Westport and Yarmouth, N.S.	38,000	38,000
Sorel and Île St. Ignace, Que.	43,000	43,000
Sydney and Bay St. Lawrence	45,000	42,500
Trois Pistoies and Les Escoumains, Que.	2,000	—
Yarmouth, N.S., and Rockland, Maine, U.S.A.	8,750	6,600
Newfoundland Coastal Steamship Services.	4,555,793	4,751,788
Totals	8,014,336	8,264,740

PART V.—CIVIL AIR TRANSPORT

Administration.—Civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act 1919 and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the social and economic aspects of commercial air services and assigns to the Air Transport Board certain regulatory functions of commercial air services (see p. 753). Part III deals with matters of government internal administration in connection with the Act.

International Air Agreements.—The position of Canada in the field of aviation as well as its geographical location makes co-operation with other nations of the world engaged in international civil aviation imperative. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization (ICAO) which has headquarters at Montreal, Que. A special article on The International Civil Aviation Organization and Canada's Participation Therein appears in the 1952-53 Year Book, pp. 820-827. At present Canada has air agreements with 21 other countries.

Section 1.—Air Services

Air transport services may be grouped into two broad classes—Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft, serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:—

- (1) Regular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit.
- (2) Irregular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft from a designated base, serving a defined area or a specific point or points, at a toll per unit.
- (3) Charter Air Services—operated by air carriers who offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Board.
- (4) Contract Air Services—operated by air carriers who do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.
- (5) Flying Clubs—operated by air carriers incorporated as non-profit organizations for the purpose of furnishing flying training and recreational flying to club members.
- (6) Specialty Services—operated by air carriers for purposes not provided for by any other class, such as flying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

Current operations of the two major airlines forming the nucleus of Canada's freight and passenger air service are outlined below.

Trans-Canada Air Lines.—In 1962, its 25th year of operation, TCA carried a record 3,865,408 passengers, 4 p.c. more than in the previous year, and flew 2,659,578,000 revenue passenger-miles with an average load factor of 60 p.c. Ton-miles of revenue commodity traffic, including air express, totalled 29,827,000 and ton-miles of air mail totalled 12,862,000. TCA celebrated its silver anniversary by flying one of its first aircraft, a ten-passenger Lockheed 10A, across the country from Halifax to Vancouver. This aircraft then flew the 122-mile route between Vancouver and Seattle on Sept. 1, 1962, 25 years to the day after TCA inaugurated its first passenger service over the same route.

During the busy summer months of 1962, the airline offered more than 3,000 seats in each direction on 24 weekly return flights across the North Atlantic, and more than 1,000 seats daily in each direction across Canada. DC-8 jets were operated across the North Atlantic to Britain and Continental Europe and during the year were introduced on all services between Canada and the Caribbean. At the year end, TCA was serving 58 communities across Canada, in the United States, in Britain and Continental Europe and in the Caribbean over 35,426 miles of air routes.

TCA's fleet at the end of the year consisted of 11 DC-8's, 22 turbo-prop Vickers Vikings and 48 turbo-prop Vickers Viscounts, plus two DC-3's. Four Douglas DC-8F's and an additional Vanguard were scheduled for delivery early in 1963 and a fifth DC-8F was on order for delivery in 1964.

1.—Operating Statistics of Trans-Canada Air Lines, 1953-62

Year	Traffic				Operating Revenue			Operating Expend- iture	Operating Surplus
	Revenue Passenger ¹		Revenue Com- modity ²	Mail	Passenger	Freight and Mail	Total ³		
	No.	'000 passenger- miles	'000 ton- miles	'000 ton- miles	\$'000	\$'000	\$'000	\$'000	\$'000
1953.....	1,307,810	759,320	7,947	5,374	48,243	11,898	62,237	61,434	+803
1954.....	1,438,349	852,476	10,193	6,942	53,124	13,077	68,764	67,732	+1,033
1955.....	1,682,195	969,392	12,175	7,704	61,105	14,314	77,428	76,771	+657
1956.....	2,072,912	1,191,784	14,476	8,613	74,479	15,639	91,306	89,197	+2,109
1957.....	2,392,713	1,385,777	15,478	9,855	86,524	16,055	104,996	96,680	+8,315
1958.....	2,785,523	1,625,689	15,395	10,386	101,553	17,407	120,555	108,130	+12,425
1959.....	3,209,197	1,828,902	17,753	10,905	114,339	18,293	134,679	120,120	+14,559
1960.....	3,440,303	2,050,600	20,868	11,593	127,596	19,307	148,987	134,263	+14,724
1961.....	3,712,068	2,481,122	24,091	11,934	143,301	19,466	165,436	143,370	+22,066
1962.....	3,865,408	2,659,578	29,827	12,862	158,792	21,914	183,473	152,821	+30,652

¹ Includes non-scheduled service.² Includes excess baggage and express.³ Includes other revenue.

Canadian Pacific Air Lines Limited.—Canadian Pacific Air Lines operates a 45,287-mile route pattern linking five continents as well as major cities in Canada. This pattern comprises 6,900 domestic route miles, including 2,450 miles on Canadian mainline service.

In 1962, CPA carried 461,658 passengers, a greater number than in any other year since the company's inception in 1942. The increase in passenger load, on both domestic and international routes, amounted to 18.6 p.c. over 1961. The revenue passenger-miles showed a 32.8-p.c. advance to 799,111,166, indicating greater mileage travelled per passenger.

CPA's international routes, 37,600 miles in extent, operate from Vancouver to Honolulu, Fiji, New Zealand and Australia on the South Pacific service; to Japan and Hong Kong via the Great Circle Route across the North Pacific; from Vancouver, Calgary and Edmonton to Amsterdam via the Polar Route; and across the Atlantic from Montreal to Portugal, Spain and Italy. A South American network serves Mexico City, Lima, Santiago and Buenos Aires. Three services link Mexico with Windsor, Toronto and Montreal in Eastern Canada and Vancouver in the West. In Canada, CPA operates a mainline transcontinental service linking Vancouver, Winnipeg, Toronto and Montreal and a domestic network of north-south routes in British Columbia, Alberta and the Yukon Territory.

CPA's fleet of aircraft consists of five Douglas Super DC-8's, five Bristol Britannias, three Douglas DC-6B's, one Douglas DC-6AB, five Convair 240's and three Douglas DC-3's. The international routes are served by the Super DC-8's and the Bristol Britannias and the domestic routes are served by the other aircraft. The transcontinental route is served by Super DC-8's.

Independent Airlines.—In addition to the two major Canadian air carriers—Trans-Canada Air Lines and Canadian Pacific Air Lines Limited—there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Eastern Provincial Airways Limited, Gander, Nfld.; Quebecair, Inc., Rimouski, Que.; TransAir Limited, Winnipeg, Man.; and Pacific Western Airlines Limited, Vancouver, B.C.

Licensed Canadian air carriers operating in Canada as at Mar. 31, 1962 held valid operating certificates covering 43 scheduled, 157 flying training, and 1,244 other non-scheduled and specialty services. These non-scheduled services, in addition to providing effective access to sections of Canada that are inaccessible by other means of transportation, act as

feeder lines to the scheduled airlines. They also include such specialty services as recreational flying, aerial photography and surveying, aerial pest control, aerial advertising and aerial patrol.

Eastern Provincial Airways Limited.—This company (successor to Maritime Central Airways—purchased in 1963) operates throughout the Atlantic Provinces, eastern Quebec, Labrador and Greenland. It serves Charlottetown and Summerside in Prince Edward Island; Moncton and Dalhousie in New Brunswick; New Glasgow and Halifax in Nova Scotia; Stephenville, Corner Brook, Gander and St. John's in Newfoundland; Goose Bay and Saglek in Labrador; Sept Îles and the Magdalen Islands in Quebec; and the French Islands of St. Pierre-Miquelon.

The Airways fleet consists of four H.P. Dart Heralds, one DC-4, two C-46's, five DC-3's, five PBV Canso's, four Cessna 185's, five DH Beavers, two S-55 helicopters, two Super Cub's and one Beechcraft 18. The company carries on an extensive air freight service throughout the above areas and conducts many specialty services such as mineral exploration, the transporting of hunting and fishing parties, ambulance service and forestry, seal, and ice patrol services.

Quebecair.—Quebecair, a privately owned commercial airline with headquarters at Rimouski, serves various points in the Province of Quebec including Montreal, Quebec, Saguenay, Rivière du Loup, Rimouski, Mont Joli, Sept Îles, Wabush, Schefferville, Gagnon, Baie Comeau, Forestville, Manicouagan and Murray Bay. No point served is more than five flying hours from Montreal.

The company began operations in 1946 under the name of Rimouski Aviation Syndicate and was incorporated under the name of Rimouski Airlines in 1947. At the beginning of 1954, the newly created Rimouski Airlines bought out Gulf Aviation and formed Quebecair. Since then, passenger service has multiplied six times, air mail carried fourteen times and freight carried sixteen times. The number of passengers flown in 1962 was 102,462 and the amount of freight carried totalled 2,137,264 lb.

The Quebecair fleet consists of four DC-3's, three F-27's, and one C-46 cargo aircraft.

TransAir Limited.—TransAir operates scheduled, charter and sportsmen's flights in Manitoba, Saskatchewan, Ontario and the Northwest Territories. Thirty-two aircraft are in service from headquarters in Winnipeg and a major base in Churchill. Scheduled flights also originate from Pickle Lake and Sioux Lookout in Ontario and Lac du Bonnet, Norway House and Lynn Lake in Manitoba. The airline has scheduled Viscount, DC-4 and DC-3 services over 4,603 unduplicated miles. Mainline stops are made at Winnipeg, Brandon, Dauphin, The Pas, Flin Flon, Lynn Lake, Thompson and Churchill in Manitoba; Red Lake, Winisk and Ottawa in Ontario; Montreal in Quebec; Yorkton, Regina, Saskatoon, Prince Albert and Swift Current in Saskatchewan; and Medicine Hat and Calgary in Alberta. TransAir also has regular flights between Churchill and Rankin Inlet, Baker Lake and Coral Harbour in the Northwest Territories. From its Winnipeg and Churchill bases, TransAir operates the vertical re-supply flights to the four main sites in the Canadian sector of the Distant Early Warning Line. The company's head office is at the Winnipeg International Airport.

Pacific Western Airlines Limited.—Pacific Western Airlines Limited, with head office at Vancouver International Airport, is one of the largest independent air carriers in Canada. Total route miles in the system is close to 7,200 and services operated include scheduled mainline, local regular unit toll and charter flights in Saskatchewan, Alberta, Yukon Territory, the Northwest Territories including the Arctic islands, and British Columbia.

Regularly scheduled mainline services are operated by Pacific Western northbound from Edmonton to Dawson Creek, Peace River, McMurray, Uranium City, Fort Smith, Pine Point, Fort Resolution, Hay River, Yellowknife, Fort Simpson, Wrigley, Norman Wells and Inuvik. Regular local services are flown from Yellowknife to Cambridge Bay and Resolute Bay; and from Inuvik to Aklavik to Fort McPherson to Arctic Red River. Local services also originate from Norman Wells to Fort Good Hope, Fort Norman, Wrigley and Fort Simpson; and from Yellowknife to Rocher River, Port Radium, Coppermine and Bathurst. The first no-reservations-required airbus service in Canada operates daily between Edmonton and Calgary.

On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River, Campbell River, and Port Hardy and local services are operated between Prince Rupert, Stewart, Ford's Cove, Anyox, Maple Bay and Alice Arm in northern British Columbia. In addition, charter services are operated out of Vancouver, Nelson, Kamloops, Prince George, Terrace and Prince Rupert; in the Northern Division from Edmonton, Peace River, Fort Smith, Hay River, Yellowknife, Inuvik and Cambridge Bay.

Aircraft operated by Pacific Western number 48 and range from DC-6B's, DC-4's, Super 46's and DC-3's on mainline services, to Otters, Beavers, Grumman Goose and Cessnas on charter and freight flights. Revenue passengers carried in 1962 totalled 146,939, freight and express carried amounted to 31,710,643 lb. and miles flown numbered 3,732,719.

Commonwealth and Foreign Scheduled Commercial Air Services.—At the end of 1962, there were 20 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences issued for the following international scheduled commercial air services into Canada:—

- Aerovias de Mexico, S.A.*, operating between Montreal, Canada, and Mexico City, Mexico.
- Air France (Compagnie Nationale Air France)*, operating between Paris and other points in Metropolitan France, Montreal, Canada, and Chicago, U.S.A., and beyond.
- Alitalia (Italian International Airlines)*, operating between Rome and Milan, Italy, Montreal, Canada, and Chicago, Ill., U.S.A.
- American Airlines, Inc.*, operating between Toronto, Canada, and New York/Newark, U.S.A., direct or via Buffalo, U.S.A.
- British Overseas Airways Corp.*, operating between London and Manchester, England, Prestwick, Scotland, Gander, Montreal and Toronto, Canada, and between London, England, Montreal, Canada, Bermuda, Barbados, Trinidad, Bahamas, Jamaica and Antigua.
- Deutsche Lufthansa Akiengesellschaft (Lufthansa German Airlines)*, operating between Hamburg, Germany, and other points abroad, Montreal, Canada, and Chicago, U.S.A.
- Eastern Air Lines, Inc.*, operating between the terminals Ottawa and Montreal, Canada, and New York, U.S.A., and between the terminals Ottawa and Montreal, Canada, and Washington, U.S.A.
- KLM Royal Dutch Airlines*, operating between Montreal, Canada, and Amsterdam, the Netherlands.
- Mohawk Airlines, Inc.*, operating between Toronto, Canada, and Buffalo, U.S.A.
- North Central Airlines, Inc.*, operating between Port Arthur/Fort William, Canada, and Duluth/Superior, Hancock/Houghton, U.S.A.
- Northeast Airlines, Inc.*, operating between Montreal, Canada, and Boston, U.S.A., via Concord, Montpelier-Barre, Burlington, White River Junction, U.S.A.
- Northwest Airlines, Inc.*, operating between Winnipeg, Canada, and Fargo, U.S.A., and between Minneapolis/St. Paul, U.S.A., Winnipeg, Edmonton, Canada, Anchorage, Alaska, and beyond.
- Pan American World Airways Inc.*, operating between Seattle, Wash., and Fairbanks, Alaska, U.S.A., with points of call at Juneau and Annette Island, Alaska, U.S.A. and Whitehorse, Y.T., Canada; and between points in the United States, Gander, Nfld., Canada, and points in Britain.

Qantas Empire Airways Ltd., operating between Sydney, Australia, San Francisco, U.S.A., and Vancouver, Canada.

Sabena Belgian World Airlines, operating between Brussels, Belgium, Shannon, Ireland, and Montreal, Canada.

Seaboard and Western Airlines, Inc., operating between points in the United States, Gander, Canada, and points in Europe.

Swiss Air Transport Company Ltd. (Swissair), operating between points in Switzerland, Montreal, Canada, and points in the U.S.A.

United Air Lines, Inc., operating between Vancouver, Canada, and Seattle, U.S.A.

West Coast Airlines, Inc., operating between Calgary, Canada, and Spokane, U.S.A.

Western Air Lines, Inc., operating between Calgary, Canada, and Great Falls, U.S.A.

Flying Schools and Clubs.—At the end of 1962, 80 commercial flying schools were registered as members of the Air Transport Association of Canada. During the year, these schools instructed and graduated 1,328 students as private pilots and 74 students as commercial pilots.

Membership in the 39 flying clubs connected with the Royal Canadian Flying Clubs Association numbered 9,646 at the end of 1962. During the year these clubs instructed and graduated 1,141 students as private pilots and 52 students as commercial pilots.

Weather Services.—Weather services are provided by the Meteorological Branch, Department of Transport, to meet the demands of the general public and all basic economic endeavours such as agriculture, industry, forestry, shipping and fishing. Meteorological service is provided to national and international aviation. The military meteorological requirements in Canada and overseas are met by special co-operative arrangements with the Department of National Defence. The observing and forecasting of ice conditions in navigable waters, both inland and coastal, have expanded rapidly in recent years.

There are 52 forecast offices in Canada, one on shipboard and four in Europe. Forecast offices are linked by 55,300 miles of teletype and radio-teletype circuits, and a national facsimile system 14,600 miles long is used for the distribution of meteorological information in chart form. As of Jan. 1, 1963 the Branch maintained 266 surface synoptic and hourly weather reporting stations, a network of 31 radiosonde stations including five in the Arctic operated jointly with the United States, 59 stations recording upper winds, and 1,878 climatological stations. One Ocean Weather Station in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement. (See also pp. 55-56.)

Ground Facilities.—Aircraft landing areas in Canada are classified in Table 2 by administrative agency, as licensed or unlicensed land facilities or seaplane bases, and military airfields. The unlicensed aerodromes and seaplane bases shown are kept in varying degrees of readiness but lack one or more of the facilities usually found in licensed airports, such as lights, passenger accommodation, ground/air communication, etc. Associated with these facilities is a network of radio aids to navigation designed to facilitate en route navigation and safe landings under low visibility conditions.

As at April 1963, the Department of Transport operated 77 low frequency radio ranges and 36 VHF omni-directional ranges (11 additional ranges were under construction). Instrument landing systems in operation totalled 39 (one of which was scheduled for decommissioning and three additional systems were under construction) and there were 183 non-directional radio beacons in operation (an additional 19 were under construction). These facilities are regularly calibrated and flight-checked by civil aviation inspectors.

**2.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province,
as at Apr. 1, 1963**

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Y.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Licensed Airports (Land)—													
Department of Transport....	1	1	3	2	8	21	2	4	5	21	12	5	85
Municipal.....	—	—	2	1	17	39	5	14	18	18	—	2	116
Private.....	3	1	—	1	21	21	5	13	14	4	—	1	84
Unlicensed Aerodromes—													
Department of Transport....	1	—	—	—	2	8	1	2	—	9	5	4	32
Municipal.....	3	—	2	2	11	3	2	33	9	14	—	3	82
Private.....	4	1	1	13	27	20	32	106	26	58	8	—	296
Abandoned or unknown.....	4	—	1	—	6	5	1	5	4	45	1	3	75
Licensed Seaplane Bases—													
Department of Transport....	—	—	—	—	—	—	—	—	—	3	1	—	4
Municipal.....	—	—	1	—	2	15	1	13	1	9	—	1	43
Private.....	6	—	2	1	59	96	32	3	4	36	18	4	261
Unlicensed Seaplane Bases—													
Department of Transport....	—	—	—	—	—	—	—	—	—	11	—	—	11
Municipal.....	—	—	1	1	—	10	7	4	2	3	1	—	29
Private.....	12	—	—	2	19	13	11	1	7	22	25	—	112
Abandoned or unknown.....	18	1	9	5	25	15	12	10	6	15	19	6	141
Military Airfields—													
RCAF.....	3	1	1	2	6	15	6	3	5	3	—	2	47
Army.....	—	—	—	1	—	1	—	—	2	—	—	—	2
RCN.....	—	—	3	—	—	—	—	—	—	—	—	—	4
U.S. Navy.....	1	—	—	—	—	—	—	—	—	—	1	—	3
U.S. Air Force.....	1	—	—	—	—	—	1	—	—	—	21	—	23
Totals, Land Bases.....	16	3	9	19	92	117	48	177	76	169	26	18	770
Totals, Seaplane Bases....	36	1	13	9	105	149	63	31	20	99	64	11	601
Totals, Military Airfields..	5	1	4	3	6	16	7	3	7	3	22	2	79
Grand Totals.....	57	5	26	31	203	282	118	211	103	271	112	31	1,450

Air Traffic Control.—The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled air space and between aircraft and obstructions on the movement area of controlled airports. This is accomplished through airport control, terminal control and area control services. These and other allied services are described below.

Airport Control Service is designed particularly to provide control service to flights operating in the vicinity of major civil airports where the volume and type of aircraft operations, weather conditions and other factors indicate its need in the interest of flight safety. The service also includes the control of all traffic on the manoeuvring area of the airport. Control is effected by means of direct radiotelephone communication or visual signals. Airport control towers are located at: Whitehorse, Y.T.; Victoria (international), Port Hardy, Abbotsford and Vancouver, B.C.; Lethbridge, Calgary, Edmonton (municipal) and Edmonton (international), Alta.; Saskatoon and Regina, Sask.; Winnipeg (international), Man.; Lakehead, Windsor, London, Toronto Island, Toronto (international), Ottawa and North Bay, Ont.; Montreal (international), Cartierville, Quebec, Baie Comeau and Sept Îles, Que.; Moncton, Fredericton and Saint John, N.B.; Halifax (international) and Sydney, N.S.; Gander (international), Nfld.; and Frobisher, N.W.T.

Terminal Control Service consists of the provision of separation to aircraft operating in accordance with the instrument flight rules in the vicinity of all controlled airports. While this service is normally provided by area control centres, separate terminal control units have been established at certain airports as follows: Calgary and Edmonton (international), Alta.; Saskatoon and Regina, Sask.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Quebec, Que.; Halifax, N.S.; Gander, Nfld.; and Frobisher, N.W.T.

Area Control Service is designed particularly to provide air traffic control service to en route flights operating within controlled airspace during weather conditions which prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments

to conduct the flight. Area control centres are located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., Moncton, N.B., Goose Bay and Gander, Nfld. Each centre is connected with control towers, terminal control units, communications stations and operation offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through radio communications facilities available at these stations to all aircraft requiring area control service. In addition, area control centres are capable of communicating directly with most pilots flying within their control areas. Each area control centre is similarly connected with adjacent centres, including centres in the United States, for the purpose of co-ordinating control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of all aircraft operating in accordance with the Instrument Flight Rules and a general record of aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within controlled airspace over Newfoundland, the Gander Control Centre provides control service within the airspace over approximately one half of the North Atlantic Ocean. The Vancouver Area Control Centre also provides control service over the Pacific Ocean within the Vancouver Oceanic Control Area.

Radar Control Service is provided extensively in the control of IFR traffic, both in terminal areas and while en route. Terminal Radar Control Service is provided at Vancouver, B.C.; Calgary and Edmonton, Alta.; Regina and Saskatoon, Sask.; Winnipeg, Man.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Montreal and Quebec, Que.; Moncton, N.B.; Halifax, N.S.; and Gander, Nfld. En route Radar Control Service is provided by area control centres and by one radar unit located at Kenora, Ont. Ground Control Approach (GCA) Service is provided at Gander, Nfld., Montreal, Que., and Toronto, Ont.

Flight Information Service consists of the provision of advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field conditions reports, data concerning aids to navigation, traffic information, refueling and transportation facilities, and other related data of assistance to the pilot in planning or conducting a flight. This service is provided by all air traffic control units, but particularly by all area control centres.

Alerting Service is designed to ensure that appropriate organizations are notified of aircraft which may be in need of search and rescue aid. This entails the maintenance and constant supervision of a continuous record of active flights to ensure that failure of an aircraft to arrive at the planned destination notified to ATC is detected immediately. The service is available to any pilot who files either a flight plan or flight notification with air traffic control.

Customs Notification Service facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada/United States boundary at certain designated customs airports. This is achieved through the prompt notification by ATC, at a pilot's request, of the customs officer at the destination airport of the intended arrival and of the need for customs clearance.

Airspace Reservation Service provides reserved airspace for specified air operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Airspace Reservation Coordination Office, located at Ottawa, is responsible for co-ordinating all airspace reservations in Canada and in the Gander and Vancouver Oceanic Control Areas.

Aircraft Movement Information Service is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.

The total number of aircraft movements at Department of Transport controlled airports in Canada during 1962 was 2,237,413.

Section 2.—Civil Aviation Operation Statistics

Table 3 provides a picture of commercial civil aviation in Canada for the five years 1957-61. It shows data on miles and hours flown, traffic carried, fuel and oil consumed, employees, salaries and operating revenues and expenses, by type of service, for Canadian air carriers followed by summary statistics for both Canadian and foreign air carriers operating in Canada. Figures for Canadian carriers include domestic and international operations, and figures for foreign companies cover miles and hours flown over Canadian territory only and exclude passengers and goods in transit through Canada. Unit toll

service refers to the transportation of passengers or goods at a toll per unit, whereas bulk service is the transportation of passengers or goods at a toll per mile or per hour for the entire aircraft. Other flying services comprise non-transportation services such as flying training, aerial photography and aerial patrol and inspection.

3.—Summary Statistics of Civil Aviation, 1957-61

Item	1957	1958	1959	1960	1961
Canadian Carriers—					
Unit Toll Transportation (revenue traffic only)—					
Hours flown.....No.	314,075	323,972	350,019	383,181	327,555
Miles flown....."	64,472,262	69,438,086	77,405,581	80,246,283	76,008,312
Passengers carried....."	3,217,266	3,599,365	4,176,501	4,218,431	4,543,009
Cargo and excess baggage carried.....lb.	61,692,930	63,761,034	76,464,625	80,152,652	80,823,898
Mail carried....."	29,263,675	31,387,841	32,894,779	34,633,139	35,749,456
Passenger-miles.....No.	1,737,582,244	2,036,163,546	2,357,386,420	2,671,926,081	3,157,518,367
Cargo and excess baggage ton-miles....."	23,587,208	25,395,836	29,505,264	35,316,334	38,504,034
Mail ton-miles....."	11,447,229	12,225,661	13,115,587	13,706,091	14,094,209
Bulk Transportation (revenue traffic only)—					
Hours flown.....No.	298,941	233,380	259,188	230,670	243,102
Miles flown....."	36,743,407	26,372,480	28,701,522	23,938,740	21,569,202
Passengers carried....."	509,337	423,572	504,763	508,984	407,888
Freight carried.....lb.	194,456,192	128,006,002	126,523,737	123,200,348	111,504,022
Other Flying Services (revenue traffic only)—					
Hours flown.....No.	113,271	135,587	155,022	81,059	75,808
Canadian Carriers, All Services—					
Revenue Traffic—					
Hours flown.....No.	726,287	692,939	764,229	694,910	646,465
Miles flown....."	101,215,669	95,810,566	106,107,103	104,185,023	97,577,514
Passengers carried....."	3,726,603	4,022,937	4,681,264	4,727,415	4,950,897
Cargo and excess baggage carried.....lb.	256,149,122	191,767,036	202,988,362	203,353,000	192,327,920
Goods carried (incl. mail)....."	285,412,797	223,154,877	235,883,141	237,986,139	228,077,376
Non-revenue Traffic—					
Hours flown.....No.	40,641	35,427	31,624	24,251	28,863
Passenger-miles....."	69,097,794	84,572,322	100,192,596	127,072,658	148,517,121
Goods ton-miles....."	2,844,976	3,296,840	4,287,822	5,244,953	5,965,235
Fuel consumed.....gal.	94,581,917	106,118,520	122,055,240	139,425,893	175,201,010
Oil consumed....."	1,000,998	897,280	889,423	812,232	475,994
Average employees.....No.	16,014	15,990	16,565	17,106	17,700
Salaries and wages paid.....\$	75,313,556	80,235,145	86,148,440	95,650,809	102,200,745
Operating revenues.....\$	190,043,065	201,713,936	220,423,558	235,973,562	254,873,901
Operating expenses.....\$	189,413,789	200,278,225	219,487,993	237,714,284	257,445,532
Canadian and Foreign Carriers—					
All Services (revenue traffic only)—					
Hours flown.....No.	742,056	709,337	798,527	712,371 ¹	664,160 ¹
Miles flown....."	104,699,140	99,858,279	110,889,252	109,699,725	103,335,386
Passengers carried....."	4,319,920	4,555,251	5,316,001	5,451,716	5,740,577
Cargo and excess baggage carried.....lb.	264,812,177	200,388,312	214,391,889	217,220,865	211,044,506
Mail carried....."	31,413,504	33,628,013	35,558,226	37,579,496	39,024,564
Unit Toll Transportation (revenue traffic only)—					
Passenger-miles.....No.	1,835,183,870	2,142,276,186	2,495,682,456	2,847,022,735	3,352,704,994
Cargo and excess baggage ton-miles....."	24,456,122	26,447,626	31,296,521	39,044,787	42,476,457
Mail ton-miles....."	12,055,649	13,037,645	13,702,638	14,321,366	14,856,343

¹ Includes other flying services.

Summary statistics of Canadian and foreign commercial air carriers, by type of carrier, are given in Table 4 for 1961. No breakdown between the domestic and the international operations of the Canadian carriers is available for bulk services. For the foreign carriers, hours and miles reported are those flown over Canadian territory only and passengers and goods in transit through Canada are excluded.

It is interesting to note that the six scheduled carriers—those holding a Class 1 licence from the Air Transport Board—accounted for 90 p.c. of all revenue passengers transported by Canadian carriers during 1961. Their share of the freight traffic, however, was smaller, amounting to approximately 55 p.c.

4.—Summary Statistics of Canadian and Foreign Commercial Air Carriers, by Type, 1961

Item	Canadian Carriers			Foreign Carriers		Total Carriers
	Scheduled		Non-scheduled	United States	Other Foreign	
	Domestic Services	International Services				
Unit Toll Transportation (revenue traffic only)—						
Hours flown.....No.	206,613	83,156	37,786	6,000	10,665	344,220
Miles flown.....“	46,831,932	24,425,620	4,750,760	1,476,885	3,985,166	81,470,363
Passengers carried.....“	3,155,534	1,238,671	148,804	576,859	190,110	5,309,978
Freight carried.....lb.	90,580,081	15,935,233	10,058,040	10,096,702	11,741,620	138,411,676
Passenger-miles.....No.	1,939,381,256	1,189,089,442	29,047,669	27,830,338	167,356,289	3,352,704,994
Freight ton-miles.....“	34,358,541	15,743,527	2,496,175	258,137	4,476,420	57,332,800
Bulk Transportation (revenue traffic only)—						
Hours flown.....No.	27,363		215,739	9	1,021	244,132
Miles flown.....“	3,999,039		17,570,163	1,563	294,258	21,865,023
Passengers carried.....“	62,243		345,645	1,088	21,623	430,599
Freight carried.....lb.	19,228,686		92,275,336	—	153,372	111,657,394

5.—Capital Investment of the Department of Transport in Air Services, as at Mar. 31, 1960-62

Item	1960	1961	1962	Total as at Mar. 31, 1962
	\$	\$	\$	\$
Civil Aviation Branch—				
Airports and other Ground Services—				
Capital appropriations.....	52,467,712	52,898,642	57,560,478	532,916,749
Transferred from other government departments..	—	15,072,171	—	
Transferred to Crown Assets Disposal Corpora- tion.....	Cr. 1,851,007	Cr. 2,991,084	Cr. 3,685,267	
Property retired, etc.....	Cr. 295,740	Cr. 25,000	Cr. 139,043	
Telecommunications and Electronics Branch—				
Radio Aids to Air and Marine Navigation—				
Capital appropriations.....	9,998,792	8,815,328	14,345,529	89,128,590
Property transferred to Crown Assets Disposal Corporation.....	Cr. 17,560	—	Cr. 26,500	
Property retired, etc.....	Cr. 43,147	—	Cr. 121,064	
Radio Act and Regulations—				
Capital appropriations.....	389,381	276,939	287,236	3,295,086
Property retired, etc.....	—	—	Cr. 38,138	
Telegraph and Telephone Service—				
Capital appropriations.....	3,771,237	202,822	54,607	4,028,666
Meteorological Branch—				
Capital appropriations.....	1,248,648	1,178,054	1,208,057	11,733,287
Transferred from other government departments...	75,054	—	—	—
Totals.....	65,743,370	75,427,872	69,445,895	641,102,378

**6.—Expenditure and Revenue of the Department of Transport in connection with
Air Services, Years Ended Mar. 31, 1960-62**

Item	1960	1961	1962
	\$	\$	\$
Expenditure			
Air Transport Board	375,166	590,890	850,941
Air Services	4,063,675	4,818,175	5,443,951
General Administration.....	1,316,009	1,564,429	1,786,935
Construction Services Administration.....	2,747,666	3,253,746	3,657,016
Civil Aviation Branch	21,963,651	20,958,090	32,319,901
Control of Civil Aviation.....	2,254,026	2,835,305	3,340,752
Airports and other ground services—operation and maintenance....	16,678,285	19,208,000	20,762,291
Airway and airport traffic control—operation and maintenance.....	5,126,621	6,802,517	7,500,249
Contributions to other governments or international agencies for the operation and maintenance of airports.....	246,439	218,705	217,542
Contributions to assist in the establishment or improvement of local airports and related facilities.....	98,570	254,163	105,667
Grants to organizations for development of civil aviation.....	559,710	639,400	393,400
Telecommunications and Electronics Branch	18,448,097	20,611,217	21,821,570
Radio aids to air and marine navigation—administration, operation and maintenance.....	15,833,875	17,717,469	18,801,872
Radio Act and Regulations—administration, operation and maintenance.....	2,403,875	2,731,535	2,998,663
Telegraph and Telephone Service—administration, operation and maintenance.....	210,347	162,213	21,035
Meteorological Branch	12,024,755	15,059,297	16,900,780
Totals, Expenditure	59,875,344	71,037,669	77,337,143
Revenue and Receipts			
Air Services Administration	5,054	8,607	8,680
Construction Branch Administration	2,309	947	1,589
Civil Aviation Branch	9,457,898	11,494,911	14,758,453
Private air pilots' certificates.....	23,676	25,600	19,415
Airport licence fees.....	671	691	1,045
Aircraft registration and airworthiness certificates.....	13,758	15,940	15,191
Fines, Aeronautics Act.....	2,775	5,767	6,707
Land rental.....	297,091	366,994	473,585
Other rentals (living quarters, hangar space, equipment, restaurants and snack bars, etc.).....	1,426,286	1,662,723	2,328,448
Concessions (gasoline and oil, taxi, restaurant and snack bars, tele- phone, parking, car rentals, etc.).....	1,867,439	2,364,101	3,208,950
Aircraft landing fees.....	4,645,709	4,820,617	6,580,628
Aircraft parking and handling.....	55,304	63,891	71,243
Power services.....	133,796	131,591	140,822
Mess receipts.....	54,892	55,973	66,667
Telephone service.....	27,928	3,611	3,519
Observation roof—turnstiles.....	55,230	75,831	109,421
Hangar storage space and heating.....	115,198	85,245	52,899
Sanitary fees.....	23,236	36,850	43,750
Sales (water, land and buildings, parking meters, etc.).....	83,461	120,125	277,833
Gander Airport (coal sales, heating, electricity, etc.).....	109,777	65,000	54,661
Interest on investment.....	10,700	10,263	9,811
Air route facilities fees.....	28,608	992,399	742,667
Joint user terminal facilities charge.....	—	—	213,804
Air Traffic Control Division.....	10,493	15,435	3,391
Sundry services and sundries.....	220,337	232,555	247,454
Refunds, previous years' expenditure.....	251,533	343,709	86,542
Telecommunications and Electronics Branch	2,860,981	3,883,591	3,002,717
Air-ground radio services.....	891,480	996,630	856,574
Communication facilities.....	2,093	2,152	2,318
Message tolls.....	425,227	419,062	390,757
Private commercial broadcasting station licence fees.....	526,940	1,266,128	739,694
Radio operators' examination fees.....	5,436	6,644	7,645
Radio station licence fees.....	313,017	360,328	384,545
Rentals (living quarters, space control lines and power, etc.).....	427,078	447,916	533,172
Sales (land and buildings, power services, publications, miscellaneous etc.).....	126,159	241,513	16,456
Telephone and telegraph services and tolls.....	66,481	55,752	6,793
Miscellaneous.....	4,418	13,422	11,278
Refunds of previous years' expenditure.....	72,602	74,050	53,485
Meteorological Branch	176,753	213,889	248,307
Totals, Revenue and Receipts	12,502,995	15,601,951	18,019,746

Table 7 shows the number of civil air personnel and airport licences in force and the number of civil aircraft registered at the end of each of the years 1958 to 1962.

7.—Personnel and Airport Licences in Force and Aircraft Registered as at Dec. 31, 1958-62

Item	1958	1959	1960	1961	1962
	No.	No.	No.	No.	No.
Personnel Licences in Force—					
Pilot—					
Glider.....	304	376	444	503	582
Private.....	9,034	10,596	14,701	14,597	15,979
Commercial.....	2,548	2,338	2,319	1,996	2,251
Senior commercial.....	423	407	439	381	356
Airline transport.....	1,069	1,179	1,250	1,287	1,342
Totals, Pilot Licences.....	13,378	14,896	19,153	18,764	20,510
Air navigators.....	108	104	96	90	94
Air traffic controllers.....	631	722	763	788	807
Flight engineers.....	49	54	57	52	28
Aircraft maintenance engineers.....	2,043	1,863	1,953	1,824	2,109
Airport Licences in Force.....	452	456	483	546	589
Aircraft Registered—					
Commercial.....	1,879	1,880	1,863	1,970	1,979
Private.....	2,438	2,780	3,251	3,708	4,088
State.....	192	197	204	207	176
Totals, Aircraft Registered.....	4,509	4,857	5,318	5,885	6,243

PART VI.—OIL AND GAS PIPELINES*

A special article covering the history and development of pipeline construction in Canada appears in the 1954 Year Book at pp. 861-869. Additional information has been carried in each succeeding edition and the following write-up brings pipeline development up to the end of 1961. DBS pipeline statistics were undergoing revision at time of writing and 1962 figures were not ready for presentation in this edition. Summary of the previous series appears in the 1962 Year Book at pp. 835-836.

Oil Pipelines.—At the end of 1962, oil pipeline mileage in Canada totalled just under 10,000 miles. Most of this is used mainly for transporting crude oil but a few systems carry natural gas liquids or refined petroleum products. The two main trunk crude-oil pipeline systems originate in Edmonton, one extending eastward to Toronto and the other southwestward to Vancouver and the State of Washington. In 1961, 1,115 miles of oil pipeline were laid but less than half that amount was constructed in 1962.

British Columbia's important new pipeline system, Western Pacific Products & Crude Oil Pipelines Ltd. was completed late in 1961 and deliveries began in January 1962. The pipeline extends from Taylor in northeastern British Columbia to Kamloops where it joins the Trans Mountain pipeline which serves Vancouver and the United States Puget Sound area. During 1962, Western Pacific doubled the capacity of its line to 45,000 bbl. a day by installing new pumping units. Trans-Prairie Pipelines, Ltd. added a 25-mile 8-inch loop to its Boundary Lake-to-Taylor system in the Peace River area to take care of the sharply increased demand for British Columbia oil.

Most of the new crude oil pipelines constructed in Alberta were field gathering lines: Pembina Pipe Line Ltd. added 51 miles of gathering line extensions in the Pembina, Willesden Green and adjacent fields; Federated Pipe Lines Ltd. laid 21 miles of extensions to the Swan Hills gathering system; and the Twining and Twining North fields were

* Prepared in the Mineral Resources Division, Department of Mines and Technical Surveys, Ottawa, under the direction of Dr. W. E. van Steenburgh, Deputy Minister.

joined to the Britamail pipeline south of Fenn-Big Valley field by 30 miles of small-diameter pipe constructed by Twining Pipeline Ltd. The largest trunk lines completed in Alberta in 1962 are for moving natural gas liquids (NGL). Hudson's Bay Oil and Gas Company Limited, through its Rangeland Division, constructed a 70-mile, 8-inch NGL pipeline from Sundre to the Westrose South field. The Cremona Pipe Line Division of Home Oil Company Limited completed 14 miles of 6-inch pipe from Harmattan to Sundre, and 28 miles of 6-inch from Madden to Calgary. Rangeland's and Cremona's NGL pipelines supplement their crude oil lines which serve the same general areas. Fifteen miles of NGL pipeline was laid by Peace River Oil Pipe Line Co. Ltd. from the new Carson Creek gas-cycling plant to Whitecourt.

Producers Pipelines Ltd. added 130 miles of extensions to its gathering systems in Saskatchewan, mainly in the Willmar, Oungre and Gapview regions. In Minnesota and Wisconsin, the Lakehead Pipe Line Co. Inc., Interprovincial Pipe Line Company's wholly-owned United States subsidiary, added 39 miles of 34-inch loop beside its 18- and 24-inch lines. This is the largest diameter pipe yet used in the Interprovincial-Lakehead system.

In October 1962, two Canadian pipeline companies received United States presidential permission to construct pipeline facilities across the international boundary. As a result, the Aurora Pipe Line Company commenced exporting natural gas liquids at a rate of about 11,000 bbl. a day from Alberta to Montana, and Interprovincial Pipe Line Company started building a lateral line to Buffalo, N.Y., capable of moving 20,000 bbl. a day of crude oil.

Interprovincial Pipeline.—Canada's longest oil pipeline, the system of Interprovincial Pipe Line Company, extends from the Redwater field, 29 miles northeast of Edmonton, Alta., to Port Credit near Toronto, Ont. This includes the part of the line passing through the United States which is operated by Interprovincial's subsidiary, Lakehead Pipe Line Company Incorporated. The total right-of-way distance of the whole system is 1,928 miles, although there is considerably more pipe than this in the system because of looping. Upon completion of the 1963 construction program, the throughput capacities of various sections of the system will range between 170,000 bbl. a day between Sarnia and Port Credit, Ont., and 494,000 bbl. a day between Cromer and Gretna, Man.

Trans Mountain Pipeline.—The system of Trans Mountain Pipe Line Company extends from Edmonton to Vancouver, enabling West Coast refineries to use Alberta crude oil. The system, completed in 1953, consists of 718 miles of 24-inch pipeline plus two 50-mile loops. Extensions into the State of Washington carry crude to refineries at Ferndale and Anacortes. In 1962, deliveries totalled 198,300 bbl., well above the throughput of previous years but still considerably below the 250,000-bbl. capacity of the system. In earlier years, there were two main crude oil receiving terminals on the line, at Edmonton and Edson. In 1962, the Western Pacific pipeline began delivering British Columbia crude at Kamloops, thus establishing a third point of delivery to the Trans Mountain system.

Other Oil Pipelines.—The pipeline of Western Pacific Products & Crude Oil Pipelines Ltd. consists of 504 miles of 12-inch pipe extending from Taylor in northeastern British Columbia to Kamloops where it joins Trans Mountain pipeline. Trans-Prairie Pipelines, Ltd. and British Columbia Oil Transmission Co. Ltd. deliver oil to the Taylor terminal from fields in northeastern British Columbia.

In Alberta, Federated Pipe Lines Ltd. serves fields in the Swan Hills region with two pipelines to Edmonton which have a combined capacity of 67,000 bbl. a day. Peace River Oil Pipe Line Co. Ltd. has a line from the Kaybob and Windfall fields to Edmonton and one from the Sturgeon Lake field to the Trans Mountain pipeline at Edmonton. Pembina Pipe Line Ltd. gathers crude from the Pembina and adjacent fields. Britamail Pipe Line Company Limited operates a pipeline that begins 140 miles south of Edmonton in the Drumheller area and gathers crude from several fields en route to Edmonton, and the Edmonton Pipe Line Company transports crude from the Joarcam and Camrose fields 40 miles south of Edmonton. Most of the other fields between Calgary and Edmonton are served by a composite pipeline system owned by three companies: Texaco Exploration

Company, which owns the Edmonton-Rimbey section; Rangeland Pipe Line Division of Hudson's Bay Oil and Gas Company Limited, the Rimbey-Sundre section; Cremona Pipeline Division of Home Oil Company Limited, Sundre to Calgary. The Imperial Pipe Line Company Limited has four systems that serve the fields in the Edmonton area including Leduc-Woodbend, Golden Spike and Redwater.

In Saskatchewan, Producers Pipelines Ltd. and its wholly-owned subsidiary Westspur Pipe Line Company gather crude from most of the fields in the southeastern part of the province and deliver it to the Interprovincial pipeline at Cromer, Man. Trans-Prairie Pipelines, Ltd., in addition to its comparatively new system in northeastern British Columbia, has a system serving the Weyburn field in southwestern Saskatchewan and connected to the Westspur pipeline, and another system in southwestern Manitoba which is linked to the Interprovincial pipeline. The South Saskatchewan Pipe Lines Company delivers oil from the group of fields in southwestern Saskatchewan to Moose Jaw, Regina and the Interprovincial pipeline at Regina.

Oil Pipeline Tariffs.—On Feb. 1, 1963, Interprovincial Pipe Line Company put into effect a new tariff schedule which included tariff reductions up to a maximum of 3 cents from Edmonton to Port Credit. Western Pacific Products & Crude Oil Pipelines Ltd. announced a tariff reduction, effective May 1, 1963, from 66 to 55 cents on its Taylor-to-Kamloops pipeline. Trans-Prairie Pipelines, Ltd., which delivers crude to Western Pacific, effected tariff reductions on Jan. 1, 1963 on oil from fields other than the Boundary Lake field. Trans Mountain Oil Pipe Line Company will reduce the tariff between Kamloops and Vancouver from 22 to 18½ cents when deliveries from Western Pacific exceed a 30,000-bbl.-a-day average over a 12-month period. Some examples of tariffs for the two major systems follow:—

<i>Route</i>	<i>Transmission Distance</i>	<i>Tariff as of Feb. 1, 1963</i>
	miles	cts. per bbl.
Edmonton, Alta., to—		
Regina, Sask.....	438	20
Gretna, Man.....	772	29
Sarnia, Ont.....	1,743	48
Port Credit, Ont.....	1,899	51
Kamloops, B.C.....	510	33
Vancouver, B.C.....	718	40
Anacortes, Wash., U.S.A.....	740	40

Natural Gas Pipelines.—There were no large natural gas pipeline construction projects in 1962 but approximately 1,000 miles of line were laid, of which more than half were small- and medium-diameter distribution lines. Trans-Canada Pipe Lines Limited, which added four sections of 34-inch loop totalling 59 miles in Manitoba and Saskatchewan in 1962, plans to begin laying another 205 miles of 34-inch loop in the spring of 1963. The company in 1963 will also purchase the Crown section which extends from the Manitoba boundary to Kapuskasing, Ont., a distance of 675 miles; Trans-Canada has operated the section since completion in 1958 but it has been owned by Northern Ontario Pipe Line Crown Corporation. The Alberta Gas Trunk Line Company, Trans-Canada's main gas supplier, laid 10 miles of 34-inch loop just west of the Alberta-Saskatchewan boundary and plans to lay another 25 miles in 1963 to serve the Trans-Canada pipeline. Gas deliveries began in October 1962 through the new 39-mile, 12-inch pipeline that Alberta Gas Trunk installed to connect the Worsley field in northwestern Alberta with the pipeline of Westcoast Transmission Company Limited near Boundary Lake, B.C.

Pipeline construction companies took advantage of the frozen ground during early 1963 to lay 72 miles of the casinghead-gas gathering systems in the Swan Hills, Judy Creek and Virginia Hills fields, and to construct 53 miles of the 12-inch transmission line that will carry the gas to the Leduc gas plant south of Edmonton. This was the first winter construction of a pipeline in Canada. A 27-mile, 14-inch gas transmission line was laid in

the early part of 1962 to transport sour gas from the Pine Creek field to the Windfall field where it is injected underground to replace Windfall gas that has been processed and marketed.

In Ontario, The Consumers' Gas Company and its subsidiaries constructed more than 300 miles of distribution and transmission lines, and Union Gas Company of Canada, Limited, built 203 miles of pipeline. Saskatchewan Power Corporation added 232 miles of transmission pipeline and 149 miles of distribution line to its Saskatchewan systems.

Trans-Canada Pipe Lines Limited.—The Trans-Canada pipeline, extending from the Alberta-Saskatchewan boundary to Montreal, is Canada's longest pipeline, with a right-of-way length of 2,145 miles. In addition, there are 145 miles of lateral lines and a 50-mile lateral completed in 1960 which delivers gas from the main line at Winnipeg to the United States boundary near Emerson, Man. In September 1962, Trans-Canada began delivering gas to the St. Lawrence Gas Company Inc. in northern New York State through the Niagara Gas Transmission Ltd. line near Cornwall. Trans-Canada increased its sales of gas from 210,400,000 Mcf. in 1961 to 237,300,000 Mcf. in 1962, an increase of 13 p.c. The company receives most of its gas from the Alberta Gas Trunk Line Company.

Alberta-to-California Pipeline.—The total length of the main Alberta-to-California line, including the section in the United States, is 1,367 miles—all 36-inch pipe except the most northerly 126-mile section just south of Whitecourt, Alta., which is 30 inches. The Alberta Gas Trunk Line Company owns the 351-mile main section in Alberta, plus more than 220 miles of the lateral feeder lines. The 107-mile section of line which crosses southeastern British Columbia from the Crowsnest Pass to Kingsgate is owned by Alberta Natural Gas Company. The two Canadian companies that deliver gas through the pipeline—Alberta and Southern Gas Co. Ltd. and Westcoast Transmission Company Limited—have been authorized to export a maximum of 610,750 Mcf. a day at the British Columbia-Idaho boundary. The pipeline began deliveries in December 1961.

Westcoast Transmission Company Limited.—The Westcoast pipeline transports gas to the Vancouver area and adjacent United States areas from the Peace River district of northeastern British Columbia and northwestern Alberta. The main trunk consists of 650 miles of 30-inch pipe starting at Taylor, B.C., but there are some 400 miles of gathering lines supplying gas from British Columbia fields. The Worsley field in Alberta started supplying gas to Westcoast late in 1962. The ultimate throughput capacity of the present Westcoast main line, after installation of more compression equipment, will be 660,000 Mcf. per day. The company also buys Alberta gas and delivers it through the Alberta-to-California pipeline to Idaho, Washington and Oregon.

Other Gas Pipelines.—The most important gas transmission lines in Alberta are owned by the Alberta Gas Trunk Line Company. The company's pipeline systems are divided into two main sections. The Plains Division is roughly the shape of a recumbent 'Y', with one arm running southeast from the Homeglen-Rimbey area and the other extending northeast from Pincher Creek. The two lines join at Princess, and the third arm runs eastward to the Trans-Canada pipeline near Burstall, Sask. The newer Foothills Division is part of the earlier-discussed Alberta-to-California pipeline. In British Columbia, the British Columbia Hydro and Power Authority provides natural gas service to Vancouver and lower mainland areas, and Inland Natural Gas Co. Ltd. serves the southern interior region. In Saskatchewan, all cities and towns using natural gas are served by Saskatchewan Power Corporation. In Manitoba, Greater Winnipeg Gas Company distributes natural gas in the Winnipeg area. Union Gas Company of Canada, Limited serves southwestern Ontario in the Windsor, London, Sarnia and Chatham areas. The Consumers' Gas Company and its subsidiaries distribute gas in Toronto, Ottawa, Niagara Falls, Welland and Fort Erie regions. In Quebec, gas is distributed by Quebec Natural Gas Limited which serves the Montreal area. Although a small amount of gas is imported into southwestern Ontario from the United States, most of the gas used in Eastern Canada is supplied by the Trans-Canada pipeline.

CHAPTER XVIII.—COMMUNICATIONS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph and radio services, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country—its size, its topography, its climate, its small population—which have reared their heads in other areas of development, have had to be faced as well in the field of communications. That these have been met is evidenced by the fact that today Canada possesses communication facilities and services second to none in the world.

Section 1.—Telecommunications*

During the past half-century, Canada has experienced tremendous economic expansion. Population growth and the advance to new industrial frontiers have been matched by an upward surge in national productivity and general standard of living. Continuing development of Canada is dependent on both individual pioneering and the co-operative efforts of many industries and the telecommunications industry is filling a vital role in this drama of growth.

Business and industry have expanded and ventured into isolated areas assisted and promoted by Canadian telecommunications industries which have anticipated the needs of the future with vast programs of development in virgin territories. Technological development has been particularly important to the extension of telecommunications in Canada. To meet the demands placed upon it, the industry has constantly introduced newer and better equipment, tools and methods of operation. In the growth of urban centres, the development of rural communities and the pioneering of new territory, Canadian telecommunications agencies through the years have sought to provide the highest quality of service for the greatest number of people. The major railways, the

*Subsections 1 and 4 to 7 were revised in the Telecommunications and Electronics Branch of the Department of Transport, Ottawa. Textual data in Subsection 2 were prepared by The Bell Telephone Company of Canada, Montreal, and in Subsection 3 by Canadian Pacific Telecommunications Department, Montreal. Statistical material of Subsection 2 and Subsection 3 was revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

hundreds of co-operating telephone companies, the radio and television companies and federal communications organizations work together with a common purpose—building networks of telecommunications from coast to coast. They provide such familiar services as telephone, telegraph, teletype, radio and television, and many other related means of communication; in addition, mutual co-operation has allowed them to satisfy a variety of defence needs.

Subsection 1.—Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Government are subject to the jurisdiction of the Board of Transport Commissioners in the matter of rates and practices under the provisions of the Railway Act (see pp. 751-753); other companies are responsible to provincial regulatory bodies. International telegraph and telephone communications are handled subject to the International Telecommunication Convention and the Regulations thereunder and/or under regional agreements. Tolls charged to the public for radio communication service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Radio communications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations and also under the Canada Shipping Act and Ship Station Radio Regulations. In addition, radio communication matters are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; the International Convention for the Safety of Life at Sea; the Inter-American Telecommunication Convention and the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and also in accordance with such regional agreements as the agreement between Canada and the United States for the promotion of safety on the Great Lakes by means of radio, the Inter-American Radio Agreement and the North American Regional Broadcasting Agreement (see also pp. 830-832).

National radio broadcasting in Canada entered its present phase in 1936 when, with the passage of the Canadian Broadcasting Act, the Canadian Broadcasting Corporation replaced the Canadian Radio Broadcasting Commission. The Act gave the Corporation wide powers in the operation of a national broadcasting system and gave to the Minister of Transport the technical control of all broadcasting stations.

During 1958 the Government established a Board of Broadcast Governors and the Canadian Broadcasting Corporation Board of Governors was abolished. The Board of Broadcast Governors regulates the establishment and operation of networks of radio and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. While the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Department.

Subsection 2.—Telephones

Alexander Graham Bell first transmitted human speech through electrically energized equipment in March 1876, and in August of the same year a one-way call from Brantford to Paris in Ontario marked the first successful long-distance test of the new invention. Soon after the instrument was perfected, telephone exchanges sprang up in many Canadian communities, sometimes with two competing companies in one place.

In April 1880, The Bell Telephone Company of Canada was established by Act of Parliament and authorized as the official agent for telephone service in 32 cities and towns across the country. However, it came to be recognized that, in the existing state of the industry, one company could scarcely develop and organize service over so wide an area, and a separate company was set up in British Columbia. The Bell Telephone Company withdrew from the Maritime Provinces in the 1880's and installations in the Prairie Provinces were sold to the respective provincial governments in 1908-09. The seven major telephone systems that developed across Canada worked together to establish long-distance service on a national basis and in 1931 they founded the Trans-Canada Telephone System which now has eight full members. These include both shareholder-owned companies and provincial government systems. They are as follows:—

- The Avalon Telephone Company Limited
- Maritime Telegraph and Telephone Company Limited
- The New Brunswick Telephone Company Limited
- The Bell Telephone Company of Canada (serving Ontario, Quebec, Newfoundland and the Northwest Territories)
- Manitoba Telephone System
- Saskatchewan Government Telephones
- Alberta Government Telephones
- British Columbia Telephone Company.

These eight systems, together with the Island Telephone Company (P.E.I.), Québec-Téléphone, serving the Lower St. Lawrence area, Ontario Northland Communications and the Okanagan Telephone Company, comprise the Telephone Association of Canada. This organization was established to ensure general co-operation in telephone matters and to provide a means of sharing technical and operating information. Many of the smaller systems have also formed similar groups, such as the Canadian Independent Telephone Association, the Quebec Independent Telephone Association and the Saskatchewan Association of Rural Telephone Companies.

Backbone of the Canadian telephone network is the Trans-Canada microwave system. Stretching more than 3,900 miles from the Atlantic to the Pacific, it is the longest single microwave system in the world. In all, the Canadian telephone industry operates more than 10,000 miles of microwave routes, carrying simultaneously many hundreds of long-distance conversations, large volumes of data, and television programs for the CBC and CTV television networks. The Trans-Canada System also supplies the communications facilities linking the more than 200 stations on the CBC French and English radio networks.

The steadily rising demand for local and long-distance service has called not only for general expansion of Canadian telephone systems but for the constant introduction of modern facilities and services. A number of Canadian companies have introduced what is called "Extended Area Service" in many of the communities they serve. This plan eliminates long-distance charges between several larger centres and their suburbs, and between many smaller places with a close community of interest. The cost of this service is included in the monthly charge for local telephone service.

Distance Dialing by both operators and customers enables the industry to provide faster and better long-distance service, while making the most efficient use of manpower and equipment. Direct Distance Dialing now makes it possible for users to dial their own long-distance calls to nearly 6,000,000 telephones in Canada, and more than 80,000,000 in Canada and the United States.

Numerous flexible telephone services are provided for government, business and industry. Special conference circuits can be quickly arranged, enabling businessmen to

discuss their affairs without the inconvenience and expense of travel. Radiotelephone installations link travellers with the regular telephone network, providing mobile service for such users as highway departments, trucking and construction firms, fire and ambulance services and police departments. A pocket radio signaller carried by a person temporarily leaving a telephone instrument area will indicate an incoming call requiring his attention.

Improvement and extension of local and long-distance telephone services continue to absorb the bulk of invested money and labour. However, the increasing mechanization of government and business operations and the resultant need to transmit large volumes of information at economical rates have led to the accelerated development of machine-to-machine communication. The growth of such communication in the past few years has been made possible to a large extent by the introduction of Data-Phone data sets which convert the electrical impulses from business machines into tone-signals acceptable to telephone circuits. A Data-Phone data set at the receiving business machine re-converts the tone-signals into machine language. Data-Phone service is now used in conjunction with a variety of business machines to send information from punched cards and from paper or magnetic tape.

Several optional services introduced recently provide great flexibility for machine-to-machine and voice calling over long distances. Wide Area Telephone Service extends a customer's flat-rate calling to telephones within seven progressively wider zones, the largest of which includes the whole of Canada. Telpak, a new private line intercity service, is now available to organizations which transmit large volumes of information requiring an exceptionally broad band of frequencies, such as data from advanced computers and high-speed facsimile equipment. It may also be used to carry simultaneously many smaller loads of information, such as voice calls and teletypewriter messages, which require relatively narrow bands of frequencies.

Many new services for business use were introduced by the industry in 1962. Among these was an electronic facsimile service which transmits or receives letter-size handwritten or printed messages, charts or drawings over the regular network or private lines. Dial Teletypewriter Exchange Service (TWX)—also made available in 1962—transmits typewritten information and certain low-speed data over the regular telephone network. Handwritten messages or sketches can be transmitted over private lines, or over the regular telephone network, in conjunction with Data-Phone data sets.

A recent product of Canadian telephone research which has been quickly accepted by business customers is known as Business Interphone, a versatile, hands-free intercommunication system and regular telephone service in a single instrument. Centrex, designed for large customers, permits outside calls to be dialed straight through to an extension without being relayed at the switchboard of private branch exchanges. A complete intercommunication system is available for use in the home and in small businesses. A special type of telephone has been introduced for hard-of-hearing users. Another new service is an automatic dialer which can retain up to 290 telephone numbers in its electronic memory. Canadian telephone research laboratories are working on basic research in such fields as electronic circuitry, microminiaturization, solid state physics and ferrites. Applied research has concentrated on meeting the needs of Canadian subscribers for modern data communications and telephone service.

The northward extension of industry in Canada has, of course, required the northward expansion of telephone communications. The British Columbia Telephone Company operates a tropospheric scatter system from Port Hardy to Annette Island. Alberta Government Telephones, in conjunction with Saskatchewan Government Telephones, recently completed construction of a microwave transmission system from Uranium City

in Saskatchewan to Fort Smith in the Northwest Territories. In Manitoba, radiotelephone service reaches out to a large number of isolated settlements and bush camps and provides communication for aircraft and for boats plying Lake Winnipeg. In northern and northwestern Ontario, Fringe Radio Service extends telephone communication beyond wire and cable facilities. A radio unit on the customer's premises permits two-way calling between subscribers in the fringe area and those served by the regular telephone network. Goose Bay in Labrador and the Schefferville area of the Quebec-Labrador boundary are in contact with the remainder of the world through a tropospheric scatter and radio-relay network hinged on Sept Îles. Bell Telephone operates its farthest north exchange at Frobisher on Baffin Island. A high-frequency radio base station at Alma, Que., serves the communications needs of the northern settlements in the area between the Atlantic Coast of Labrador and the Quebec shore of Hudson Bay, and also provides communications for aircraft operating in the North.

Telephone Statistics.—There were 2,509 telephone systems operating in Canada in 1961, compared with 2,558 in 1960. The number of co-operative systems in rural districts decreased from 2,180 to 2,108, and the number of shareholder-owned companies decreased from 283 to 259. The largest of the stock companies, The Bell Telephone Company of Canada, which operates throughout the greater part of Ontario and Quebec and in Newfoundland and the Northwest Territories, served 61 p.c. of all the telephones in Canada, as compared with 63 p.c. in 1960. The British Columbia Telephone Company, also shareholder-owned, served 8.5 p.c. of the total number of telephones in 1961 and 9 p.c. in 1960.

The number of telephones in use in Canada increased by 79 p.c. during the ten-year period 1952-61. At Dec. 31, 1961, there were 6,014,015 telephones in service, compared with 5,728,167 in 1960 and 3,352,366 in 1952. The number of residential telephones and the number of business telephones increased by 6 p.c. and 3 p.c., respectively, during 1961.

1.—Mileages of Pole-Line and Wire and Number of Telephones in Use, 1952-61

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Systems	Route Mileage ¹	Length of Wire	Telephones in Use			
				Business	Residential	Total	Per 100 Population
	No.	miles	miles	No.	No.	No.	No.
1952.....	2,888	253,420	11,265,903	1,016,775	2,335,591	3,352,366	23.2
1953.....	2,793	257,059	12,307,070	1,084,815	2,521,592	3,606,407	24.4
1954.....	2,788	257,444	13,357,289	1,153,806	2,706,463	3,860,269	25.4
1955.....	2,739	259,784	14,758,160	1,236,341	2,915,337	4,151,678	26.6
1956.....	2,661	269,303	16,410,897	1,334,403	3,164,922	4,499,325	28.0
1957.....	2,637	274,334	18,161,444	1,409,446	3,417,689	4,827,135	29.1
1958.....	2,619	280,884	20,250,410	1,486,393	3,631,900	5,118,293	30.0
1959.....	2,605	267,737	22,791,120	1,568,735	3,870,288	5,439,023	31.2
1960.....	2,558	274,855	25,333,802	1,673,915	4,054,252	5,728,167	32.2
1961.....	2,509	306,167	26,986,478	1,729,599	4,284,416	6,014,015	32.6

¹ Includes underground conduits and buried cable.

2.—Telephones in Use, by Province, 1961

Province or Territory	On Individual Lines		On 2- and 4-Party Lines		On Rural Lines		Public Pay Telephones
	Business	Residential	Business	Residential	Business	Residential	
	No.	No.	No.	No.	No.	No.	
Newfoundland.....	6,275	14,854	464	22,979	—	2,251	426
Prince Edward Island..	2,010	5,125	87	3,012	340	5,737	138
Nova Scotia.....	15,308	74,177	480	20,985	1,251	27,671	2,659
New Brunswick.....	11,529	36,018	851	33,025	1,193	20,563	1,786
Quebec.....	141,125	576,403	8,368	287,234	12,173	115,502	24,349
Ontario.....	202,458	779,091	7,014 ¹	510,397 ¹	11,503 ¹	193,822 ¹	27,121
Manitoba.....	26,153	105,706	490	64,158	2,453	33,414	2,514
Saskatchewan.....	24,173	123,355	34	521	3,359	57,808	1,901
Alberta.....	50,997	229,567	14	385	1,015	31,398	2,536
British Columbia.....	53,721	61,509	420	243,336	4,145	82,678	4,898
Yukon Territory.....	30	6	13	37	—	44	—
Northwest Territories..	219	170	87	339	2	84	27
Canada.....	533,995	2,005,981	18,322	1,186,408	37,434	570,972	68,355
	Private Branch Exchange		Extensions		Mobile	Total	Telephones per 100 Population
	Business	Residential	Business	Residential			
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	6,275	—	4,394	4,049	2	61,969	13.3
Prince Edward Island..	1,311	—	1,377	1,160	65	20,362	19.2
Nova Scotia.....	16,156	1	9,699	14,949	512	183,848	24.8
New Brunswick.....	12,262	—	9,061	10,171	350	136,809	22.7
Quebec.....	189,191	45	111,884	144,827	193	1,611,294	30.3
Ontario.....	300,755	230	145,804	243,236	484	2,421,915	38.5
Manitoba.....	30,318	—	16,281	17,305	46	298,838	32.1
Saskatchewan.....	19,215	—	10,163	10,415	138	251,130	27.1
Alberta.....	54,515	—	20,877	30,203	657	422,164	31.1
British Columbia.....	65,677	—	42,904	44,354	560	604,102	36.7
Yukon Territory.....	14	—	23	56	—	223	0.9
Northwest Territories..	244	—	135	54	—	1,361	9.1
Canada.....	695,833	276	372,602	520,779	3,055	6,014,015	32.6

¹ Ontario 4-party telephones included under Rural Lines.

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of long-distance calls, gives their total volume of business. Estimates are included for the smaller systems. The number of completed calls on all systems in 1961 was estimated at 10,468,915,000, or an average of 1,741 calls per telephone and 568 calls per person. Despite the increase in extended area service which eliminates toll charges between adjacent communities, long-distance calls continue to increase in number.

3.—Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1952-61

NOTE.—Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Local Calls	Long- Distance Calls	Total Calls	Total Calls per Capita	Average Calls per Telephone		
					Local	Long- Distance	Total
	No.	No.	No.	No.	No.	No.	No.
1952.....	5,482,973,000	126,721,000	5,609,694,000	389	1,635	37.8	1,673
1953.....	5,952,756,000	131,899,000	6,084,655,000	412	1,650	36.6	1,687
1954.....	6,209,771,000	137,761,000	6,347,532,000	418	1,608	35.7	1,644
1955.....	6,808,389,000	153,087,000	6,961,476,000	446	1,640	36.8	1,677
1956.....	7,593,525,000	171,280,000	7,764,805,000	486	1,688	38.0	1,726
1957.....	8,077,101,000	178,608,000	8,255,709,000	498	1,673	37.0	1,710
1958.....	8,513,455,000	194,186,000	8,707,641,000	511	1,663	37.9	1,701
1959.....	9,044,825,000	205,395,000	9,250,220,000	530	1,663	37.9	1,701
1960.....	9,364,586,000	215,275,000	9,579,861,000	537	1,635	37.6	1,672
1961.....	10,242,657,000	226,258,000	10,468,915,000	568	1,703	37.6	1,741

The steady increases in capitalization, revenue and expenditure of telephone companies together with the figures of number of employees and salaries and wages paid are shown for the years 1952-61 in Table 4. Provincial figures for 1961 are given in Table 5.

4.—Financial Statistics of Telephone Systems, 1952-61

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Capital Stock ¹	Long-Term Debt	Cost of Property and Equipment	Revenue	Expenditure	Full-Time Em- ployees	Salaries and Wages ²
	\$	\$	\$	\$	\$	No.	\$
1952.....	335,575,292	378,628,224	1,027,527,807	279,001,814	244,506,402	48,207	131,370,832
1953.....	398,198,697	450,511,233	1,152,309,749	310,833,599	269,817,828	50,540	145,109,934
1954.....	418,287,016	498,231,715	1,301,545,688	340,623,170	296,384,292	51,929	159,329,238
1955.....	467,026,669	521,336,006	1,470,679,433	376,716,651	328,880,674	55,673	173,922,973
1956.....	549,196,657	583,795,407	1,672,363,570	422,370,206	366,117,634	60,121	193,992,142
1957.....	627,051,991	683,386,827	1,941,591,700	467,701,983	412,158,348	64,074	219,693,002
1958.....	639,824,492	845,613,559	2,202,747,303	507,689,602	451,672,799	61,400	234,298,163
1959.....	730,874,613	916,791,207	2,444,576,788	582,262,550	509,727,426	58,826	240,691,244
1960.....	758,291,439	1,068,399,476	2,692,484,052	627,982,847	549,042,845	57,670	247,128,467
1961.....	879,424,405	1,134,866,419	2,926,527,459	679,306,194	590,428,169	56,322	254,207,734

¹ Includes premium on capital stock.

² Full-time and part-time.

5.—Financial Statistics of Telephone Systems, by Province, 1961

Province or Territory	Capital Stock ¹	Cost of Property and Equipment	Revenue	Expenditure	Full-Time Em- ployees	Salaries and Wages ²
	\$	\$	\$	\$	No.	\$
Newfoundland.....	8,272,925	21,766,871	3,840,423	2,707,935	536	1,550,966
Prince Edward Island.....	1,921,120	6,912,801	1,549,506	1,360,113	167	496,028
Nova Scotia.....	26,723,577	78,280,074	17,783,945	15,167,471	1,865	6,290,451
New Brunswick.....	29,495,108	74,907,834	16,285,794	14,054,631	1,536	5,712,717
Quebec ³	611,739,931	1,903,519,742	455,879,926	395,321,591	16,474 ⁴	79,022,342 ⁵
Ontario.....	15,287,604	43,858,807	14,989,137	11,026,542	19,924	92,661,374
Manitoba.....	12,763,498	148,049,435	25,284,281	24,718,690	3,747	13,722,127
Saskatchewan.....	18,548,099	130,907,732	28,313,373	25,024,462	1,922	8,737,228
Alberta.....	32,591,950	197,797,162	45,183,403	39,985,164	4,443	19,191,836
British Columbia.....	121,968,393	320,356,577	70,099,667	60,992,886	5,697	26,775,241
Yukon Territory.....	65,000	34,684	24,558	21,170	3	18,550
Northwest Territories.....	57,200	135,740	72,181	57,514	8	28,874
Canada.....	879,424,405	2,926,527,459	679,306,194	590,428,169	56,322	254,207,734

¹ Includes premium on capital stock.

² Full-time and part-time.

³ Includes data of The Bell Telephone Company, which operates in Quebec, Ontario, Newfoundland and the Northwest Territories.

⁴ Includes data of Northern Telephone Limited, which operates in Ontario and Quebec.

⁵ Includes 57 full-time Bell Telephone Company employees in Newfoundland and the Northwest Territories.

Subsection 3.—Telegraphs

Public telegraph service in Canada is, for the most part, furnished by the railway companies through their telecommunications departments. The preponderance of this service is provided by Canadian National and Canadian Pacific. Both major telecommunication companies were at one time engaged primarily in meeting the communications needs of the railways and in handling telegrams and cablegrams for the public. While continuing with these activities they have kept pace with modern technological advances and are now providing a wide range of services which include data processing systems, radio and television network services, facsimile and wire photo services, telemetering, complex teletype and data switching centres, and other forms of voice and record communications.

Canadian National-Canadian Pacific telex service, established in 1956, has had very good public acceptance. At the end of 1962 there were about 5,000 customer installations in Canada, each having access to the other and also to world-wide telex networks in other countries.

In 1962, Canadian National and Canadian Pacific commenced construction of a high-grade microwave radio relay system between Montreal and Vancouver. The new system, to be completed in late 1963, is designed to serve Ottawa, Toronto, Sudbury, the Lakehead, Winnipeg, Saskatoon, Regina, Edmonton, Calgary and Kamloops, as well as the terminal points at Montreal and Vancouver. Because of the high value of such a system for national defence, it will be routed to by-pass military target areas. At the outset it will be capable of carrying 600 voice channels which may be used for the transmission of all forms of voice and record communications. The system can be expanded readily by the addition of radio channels to provide network television service or increased circuitry for general communications use. The new system will link up with the system already in operation from St. John's, Nfld., to Montreal, thus providing microwave service across the Continent.

Increased industrial and military interests in the Canadian northwest have created a need for all forms of communications services, and to meet these Canadian National Telecommunications (CNT) undertook several major projects. The first of these was a 1,200-mile microwave system between northern Alberta and the Yukon-Alaska border, which was completed in July 1961. Starting at Grande Prairie, 450 miles north of Edmonton, this network proceeds northward through Alberta, crosses the northeast corner of British Columbia and, following the Alaska Highway through Yukon Territory, joins an interchange system at Mount Dave on the Yukon-Alaska border. At Grande Prairie, the CNT system joins the Alberta Government telephone system running southward through Alberta to the Canada-United States border, where it connects with United States networks.

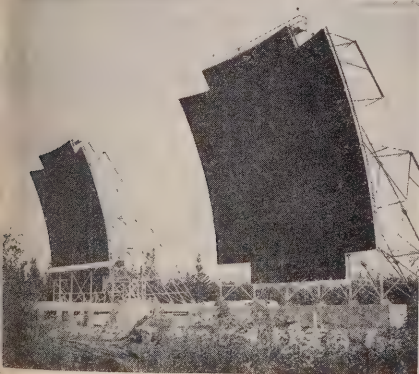
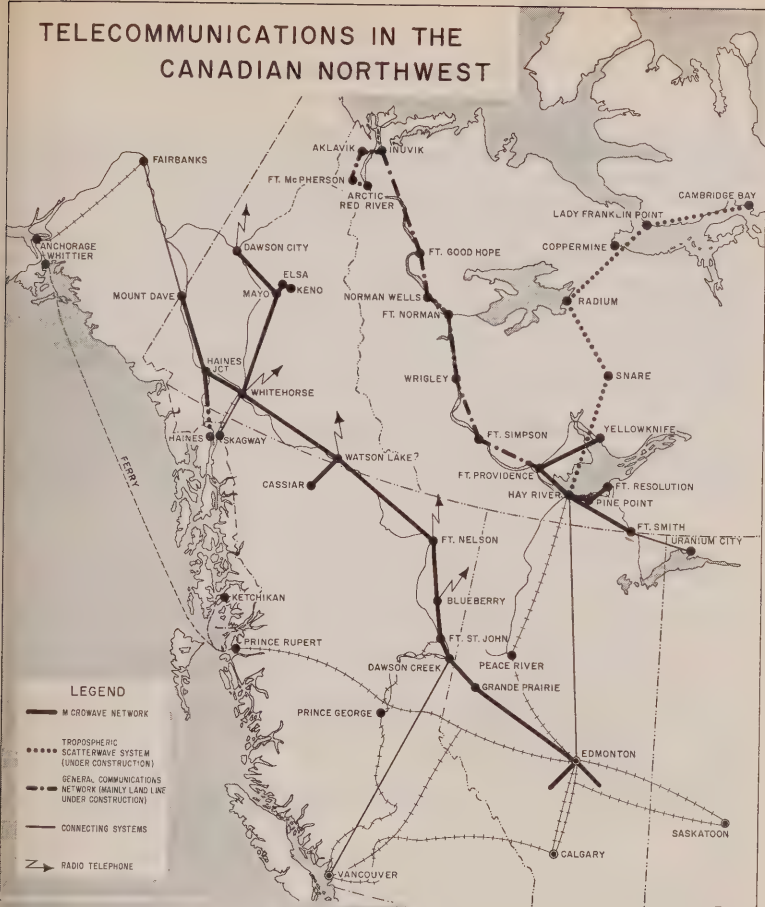
In the summer of 1961, CNT completed construction of a land-line communications network stretching around Great Slave Lake from Fort Smith on the Alberta-Northwest Territories border to Yellowknife, bringing the full range of communications services to residents of Yellowknife, Fort Rae, Fort Providence, Hay River, Pine Point and Fort Smith. This network is connected to the 'outside' by a microwave system between Hay River and Edmonton; the section of the microwave system within the Northwest Territories was constructed by CNT and the Alberta section by the Alberta Government Telephone Company.

In 1962, approval was given to CNT to construct a 1,020-mile telephone pole-line down the length of the Mackenzie River from Hay River to Inuvik. When completed in 1965 this project will provide simultaneous long-distance telephone, teletype, telex, commercial telegraphs, air operational and weather communications to Fort Simpson, Wrigley, Fort Norman, Norman Wells, Fort Good Hope and Inuvik. In addition, Aklavik, Fort McPherson and Arctic Red River will be linked to the system at Inuvik by very high frequency radio communications. Service will be instituted at successive communities as construction of the line proceeds northward.

In late 1962, CNT started construction of a tropospheric scatterwave communications system which will extend from Hay River in the Northwest Territories to Lady Franklin Point on Victoria Island in the Arctic Archipelago. Some channels of this 554-mile system, to be completed by the end of 1963, will be used for defence purposes and, in addition, the system will enable CNT to provide various types of communications services to such outlying communities as Coppermine and Cambridge Bay.

CNT has also made a major entry in the field of public telephone service. In Newfoundland, it provides public telephone service at Gander and at many smaller communities throughout that province. At the end of 1962 there were over 8,000 telephones connected to CNT exchanges in Newfoundland. CNT telephone exchanges also provide service to the public in the Yukon and Northwest Territories and in northern British Columbia. CNT local and long-distance telephone service is available in such northern communities

TELECOMMUNICATIONS IN THE CANADIAN NORTHWEST



Massive antenna installations at the Hay River, N.W.T., terminal of the Tropospheric Scatterwave system; similar installations are being made at Snare Falls, Port Radium and Lady Franklin Point.

Pole-line construction in the isolated North is adapted to local conditions; where heavy rock or permafrost is encountered, tripod installations are used.



as Hay River, Fort Smith, Yellowknife, Fort Nelson, Watson Lake, Cassiar, Whitehorse, Mayo, Elsa, Keno and Dawson. Service to the latter points north of Whitehorse is provided over a CNT land-line between Whitehorse and Dawson. The total number of telephones in service in the Yukon and Northwest Territories is in excess of 6,000, almost 3,000 of them in Whitehorse alone.

Telegraph Statistics.—At the end of 1961 nine telegraph and cable companies were in operation in Canada. These systems, composed of lines owned by the chartered railway and telegraph companies, including the Canadian Overseas Telecommunication Corporation (see below), increased their property and equipment to \$299,568,298, 12 p.c. above that reported in 1960. Both operating revenues and expenses continued to increase and net income decreased to \$10,696,819, 10 p.c. below the 1960 figure. Fewer telegrams were sent, the lowest number since 1942, but cablegrams continued to increase.

6.—Summary Statistics of Canadian Telegraphs, 1952-61

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Operating Revenues	Operating Expenses	Net Operating Revenue	Pole-Line Mileage	Wire Mileage	Employees ¹	Messages, Land ²	Cablegrams and Marconi-grams ³	Money Transferred
	\$	\$	\$	miles	miles	No.	No.	No.	\$
1952.....	33,093,843	31,617,156	1,476,687	52,699	437,581	11,272	21,614,196	1,934,433	19,514,490
1953.....	36,920,384	33,953,196	2,967,188	52,727	450,835	11,618	21,222,706	2,042,921	21,553,387
1954.....	38,203,590	33,203,942	4,999,648	46,284	434,178	10,629	19,906,354	2,105,513	21,550,372
1955.....	39,320,960	32,501,844	6,819,116	48,067	438,692	10,852	20,067,424	2,238,433	23,264,851
1956.....	40,720,213	33,688,888	7,031,325	48,062	442,891	10,833	20,381,641	2,429,893	24,295,308
1957.....	44,796,778	39,271,893	5,524,885	48,379	451,669	11,159	19,163,723	2,580,745	25,586,057
1958.....	47,633,991	39,908,538	7,725,453	47,495	464,661	10,587	17,296,786	2,499,871	24,434,887
1959.....	52,962,913	43,511,666	9,451,247	47,470	486,875	10,586	16,390,997	2,602,974	25,589,067
1960.....	58,546,167	45,538,063	13,008,104	48,159	510,640	10,279	15,546,292	2,663,598	25,134,534
1961.....	64,053,626	51,735,006	12,318,620	48,511	524,720	9,997	15,138,706	2,809,691	25,041,156

¹ Excludes commission operators. ² Includes messages to and from vessels on the Great Lakes and the St. Lawrence River and messages to and from stations. ³ Excludes relayed messages.

Subsection 4.—Overseas Telecommunications Services

The Canadian Overseas Telecommunication Corporation was established in 1950 to maintain and operate external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and overseas points; to make use of all developments in cable and radio transmission and reception for external telecommunication services; and to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other parts of the Commonwealth.

In 1952 the Corporation commenced an expansion program of overseas services designed to meet future requirements and the following services have so far been established: direct telegraph, telephone and telex communications between Canada and Argentina, Australia, Barbados, Bermuda, Britain, Denmark, Finland, France, Germany, Italy, Jamaica, Japan, Netherlands, New Zealand, Norway, Sweden and Switzerland.

In 1956 the first transatlantic telephone cable, a joint project with the British Post Office, the American Telephone and Telegraph Company, the Eastern Telephone and Telegraph Company and the Corporation, was brought into service. Apart from normal use of the system for public telephone and telegraph message traffic, capacity is available for private leased circuits. The Corporation introduced international telex service to Canada in 1956 and service with 75 countries is available. The first transatlantic slow-scan

television pictures were transmitted between Canada and Britain in 1959. In addition, 55 telephone circuits have been provided by cable and microwave for use between the mainland and Newfoundland.

The Canada-Britain 80-circuit telephone cable (CANTAT) was opened for service on Dec. 19, 1961. The Canada-Greenland-Iceland 24-circuit telephone cable (ICECAN), primarily provided to meet the North Atlantic communication needs of international civil aviation, was opened for service on Jan. 1, 1963. Its connecting counterpart between Iceland and Scotland (SCOTICE) was brought into service on Jan. 22, 1962. A four-party project (Canada-Britain-Australia and New Zealand) will provide a Canada-New Zealand-Australia 80-circuit telephone cable (COMPAC). This section of a Commonwealth round-the-world telephone cable system is scheduled for completion in late 1963. The Tasman section between Australia and New Zealand was opened July 9, 1962. Arrangements were completed for the right of use of a number of circuits for Canadian purposes in a telephone cable system connecting Bermuda and the United States brought into operation in January 1962, and in a telephone cable system connecting Jamaica and the United States brought into operation in February 1963. A six-party (Canada-Britain-Australia-New Zealand-Singapore and the Federation of Malaya) section of the Commonwealth round-the-world telephone cable system, scheduled for completion in 1966, will provide an Australia-New Guinea-North Borneo-Singapore-Malaya and Hong Kong 80-circuit telephone cable (SEACOM).

In addition to the overseas services operated by the Canadian Overseas Telecommunication Corporation, two cable companies operate submarine cables landing in Canada—the Commercial Cable Company and the Western Union Telegraph Company. These companies operate to stations in Britain, Ireland, the United States, the Azores and St. Pierre and Miquelon Islands.

A list of cables landed in Canada is given in Table 7.

7.—External Cables Landed in Canada, 1962

Company and Station	Cables	Nautical Miles
	No.	No.
Canadian Overseas Telecommunication Corporation (COTC)—		
Halifax, N.S. via Azores to Porthcurno, England.....	1	3,078
Port Alberni, B.C. to Auckland, New Zealand.....	1	6,748
Port Alberni, B.C. to Sydney, Australia.....	1	7,830
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland ¹	2	2,280
Hampden, Nfld. to Oban, Scotland (CANTAT).....	1	2,010
Hampden, Nfld. to Vestmannaeyjar, Iceland via Greenland.....	1	1,657
Commercial Cable Company (CCC)—		
St. John's, Nfld. to Waterville, Ireland.....	4 ²	7,086
St. John's, Nfld. to New York, N.Y., U.S.A.....	2	2,587
Canso, N.S. via Azores to Ireland.....	2	3,426
Canso, N.S. to New York, N.Y., U.S.A.....	2	2,890
Canso, N.S. to St. John's, Nfld.....	2	913
Western Union Telegraph Company (WU)—		
Bay Roberts, Nfld. to Penzance, England.....	4	8,479
Bay Roberts, Nfld. to Hammill, N.Y., U.S.A.....	2	2,778
Bay Roberts, Nfld. to Azores.....	1	1,343
Heart's Content, Nfld. to Valencia, Ireland.....	4 ³	7,541
Placentia, Nfld. to St. Pierre and Miquelon Islands.....	2	250
North Sydney, N.S. to St. Pierre and Miquelon Islands.....	3	594
North Sydney, N.S. via Canso to Duxbury, Mass., U.S.A.....	1	695
North Sydney, N.S. to Island Cove, Nfld.....	2	635
North Sydney, N.S. to Colinet, Nfld.....	1	323
Island Cove, Nfld. to St. Pierre and Miquelon Islands.....	1	130
Eastern Telephone and Telegraph Company (ET&T)—		
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland ¹	2	2,280
Sydney Mines, N.S. via Clarenville, Nfld. to Penmarch, France.....	2	2,400
New Brunswick Telephone Company Limited (NBTEL)—		
Campobello Island, N.B. to Lubec, Me., U.S.A.....	1	0.3

¹ Twin cable from Clarenville, Nfld. to Oban, Scotland and single cable from Clarenville, Nfld. via Terranceville, Nfld. to Sydney Mines, N.S.

² Licensed for operation by two carriers—COTC and ET&T.

³ One cable unserviceable.

Subsection 5.—Meteorological Communications

Weather stations operated by the Meteorological Branch of the Department of Transport throughout Canada are linked coast-to-coast by means of teletype and in the remote northern areas by radio or radioteletype. The land-line teletype circuits are leased from commercial companies. The radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the federal Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial or radio facilities to the nearest station on the teletype line for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast teletype systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These main meteorological communications centres not only handle the distribution of weather information within Canada including the Arctic, but also effect international exchange with the United States and Europe and, through them, with many other countries. For the latter purpose, the Canadian Meteorological Branch and the British Meteorological Office share the cost of a leased duplex circuit in the transatlantic cable. Altogether, the Meteorological Branch uses 55,300 miles of teletype circuits connecting 350 teletype offices.

In addition, a facsimile network connects forecast offices including radio facsimile transmission to Arctic stations and ships at sea. Weather charts originating at the Central Analysis Office in Montreal receive national distribution over this network. Regional transmissions of additional charts are distributed on a local basis. Altogether, the Meteorological Branch utilizes 14,600 miles of facsimile circuits, serving 71 offices.

Subsection 6.—Federal Government Civil Telecommunications and Electronics Services

Radio regulation and radio aids to navigation services are under the jurisdiction of the Telecommunications and Electronics Branch of the Department of Transport. The functions and responsibilities of the Branch may be summarized as follows: (1) administration of the Radio Act and Regulations and the Radio Provisions of the Canada Shipping Act and Ship Station Radio Regulations; (2) research into and development of new and improved communication and electronic equipment and systems needed for aeronautical, marine, meteorological and other services; (3) construction, maintenance and operation of radio aids to marine and air navigation and of radio communication stations including procurement of the necessary equipment; (4) development and administration of government policy with respect to the Canadian Overseas Telecommunication Corporation and Canada's participation on the Commonwealth Telecommunications Board; (5) administration of the leasing of land-line facilities required for all services of the Department; (6) planning of emergency measures and administration of the Emergency National Telecommunication Organization (ENTO); (7) administration of the Telegraphs Act and the Regulations thereunder covering the licensing of overseas submarine cables; (8) participation in the work of the International Telecommunication Union and its subsidiary organs; and (9) participation in the communication and electronic activities of the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) and the International Marine Consultative Committee (IMCO).

Licensing and Regulation of Radio Stations.—Under the Radio Act and the Canada Shipping Act it is provided that radio stations employing a form of Hertzian wave transmission, including television and radar, be licensed by the Department of Transport, unless otherwise exempted by regulation. Licensing, which provides basic control over the right to establish a radio station, involves the assigning of specific frequencies to each station. Frequencies are assigned to many types of services on a shared non-interference basis. Engineering briefs covering the selection or change of frequency, amount of power and

design of the directional antenna system must be approved by the Department of Transport and notification sent to the signatory countries of the North American Regional Broadcasting Agreement before a new broadcasting station can be licensed or before modification can be made in an existing station. The setting of standards for the equipment, installation and operation of a station provides control for efficient use of the radio spectrum. A further control is the requirement that operating personnel be subject to examination and certification.

Eight monitoring stations are maintained at suitable points across Canada to make frequency measurements and record transmissions to ensure that radio stations are complying with the procedures set forth for their particular service, to detect non-licensed stations, to assist in the investigation of inter-station interference and to make studies of spectrum utilization.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that comes up to the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. All Canadian and foreign ships are subject to inspection to ensure that they conform to the requirements of the Safety of Life at Sea Convention.

Standards have been developed for the installation of aircraft radio stations specifying the techniques and materials that may be used, and inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. Inflight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both land and oceanic routes, are also made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile stations and the regulations made under the Radio Act provide for the examination and certification of operators, both professional and amateur.

Number of Radio Stations Licensed and Operated in Canada.—During the year ended Mar. 31, 1963, 98,485 licences were issued in respect of radio stations in Canada. This figure includes stations operated by departments of the federal, provincial and municipal governments, stations on ships and aircraft registered in Canada and mobile stations operating in the public and private land mobile services but does not include private commercial broadcasting licences.

<u>Item</u>	<u>Year Ended</u>	
	<u>Mar. 31, 1962</u>	<u>Mar. 31, 1963</u>
	No.	No.
New applications received.....	15,714	16,540
Authorizations granted.....	17,000	14,510
Licences cancelled.....	6,580	7,933
Licences renewed.....	61,162	71,396
Amateur licences issued.....	9,347	10,182
General radio service licences issued.....	—	13,579
Total licences issued.....	79,329	98,485
Licence amendments.....	19,851	22,832
Certificates of registration issued to U.S. licensees.....	1,630	1,831
Net increase over preceding year.....	11,487	19,156

Investigation and Suppression of Inductive Interference.—The Radio Act provides penalties for selling or using apparatus liable to cause interference to radio reception. Standards are developed and type approvals issued for certain classes of such equipment. The Telecommunications and Electronics Branch of the Department of Transport provides also a country-wide interference service using special investigation equipment for the purpose of tracing sources of interference and recommending cures for interference to broadcast, television and other radio reception.

Cars equipped for measuring and locating sources of interference operate from offices located in 30 cities throughout Canada; 29,526 cases were dealt with during the fiscal year 1962-63. Sources include power lines, auto ignitions, heavy electrical equipment, domestic appliances, electro-medical apparatus, industrial radio frequency generators and TV receivers.

Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order. Certain low-powered radio transmitting and receiving equipment is exempt from the operation of the Radio Act, e.g., garage door radio controls for a number of models have been exempted and consequently may be operated without the radio station licence otherwise required.

Radio Aids to Marine and Aeronautical Navigation.—The services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are outlined in the 1962 Year Book, at pp. 848-850. Details may be obtained on request from the Department of Transport, Ottawa.

Subsection 7.—Public and Private Commercial Microwave Facilities

Because of its population distribution and the vast areas served by microwave communication links, Canada ranks second highest among the world's users of microwave communication systems on a per capita/per mile basis. This subsection gives a summary of the facilities existing or under construction at mid-1963.

Railways.—As already stated on pp. 825-828, the Canadian National and Canadian Pacific Telecommunications Departments' existing microwave system links Ontario, Quebec and parts of the Maritimes and Newfoundland. A major expansion under way will provide communication services from coast to coast for television, telephone and data relay purposes. In addition, Canadian National Telecommunications has installed a microwave system between Alberta and the Yukon Territory which carries telephone and data traffic, and serves both civil and military organizations in these areas. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric-scatter system connects Alberta and the Northwest Territories, also intended to provide communication for civil and military use in Far North areas. The Quebec North Shore-Labrador Railways have developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railway is in the process of completing a microwave installation connecting northern Ontario and James Bay for purposes of military and civil communication. The Pacific and Great Eastern Railway has made use of an extensive 6,000 Mc/s microwave system linking Vancouver with Prince George and Dawson Creek, B.C.

Telephones.—The Trans-Canada Telephone System consists of eight provincial and private communication companies serving the various provinces and collectively providing an extensive trans-Canada microwave system for the purpose of carrying telephone, television and data transmissions from coast to coast (see also p. 821). This organization utilizes the portions of the radio spectrum in the 450, 900, 4,000, 6,000 and 10,000 Mc/s bands. Member companies individually operate microwave systems into northern British Columbia, Alberta, Saskatchewan, Manitoba and Ontario, in addition to the main TD-cross-country radio systems. These routes provide service to civil and military organization throughout the various provinces. Tropospheric-scatter systems in British Columbia, Manitoba and Quebec are necessary for communications beyond the reach of existing microwave systems. Numerous microwave television feeds are located in areas not served by the trans-Canada system for the purpose of interconnecting outlying areas with the television networks.

Hydro.—The Quebec Hydro-Electric Commission, The Hydro-Electric Power Commission of Ontario, Manitoba Hydro, the Saskatchewan Power Corporation, the Calgary Power Corporation and the British Columbia Hydro and Power Authority utilize considerable microwave radio systems for control and communication purposes. These organizations use portions of the radio spectrum from 450 to 10,000 Gc/s.

Television.—The two main television interests in Canada, the CBC and CTV, lease private microwave facilities for the relay of television programs from coast to coast. In addition to this, studio transmitter links are used by various television stations where the television transmitter is situated some distance from the studio and interconnection is required. In sparsely populated areas, off-air pickup signals from primary television stations are sometimes relayed via microwave to rebroadcasting sites. Microwave facilities are also used in connection with portable and mobile television pickup where program material is intended for the main studio.

Industrial.—Many industrial firms utilize existing public communication facilities. However, some organizations have installed private microwave systems; for example, The Aluminum Company of Canada uses a multiple hop 6,000 Mc/s system in the Arvida, Que., area.

Subsection 8.—Miscellaneous Radio Communication Services

In addition to radio communication services provided by the Federal Government, extensive radio communication systems have been established in the provinces, mainly for police, highway and forestry protection purposes.

Municipal government departments have steadily increased their use of radio to facilitate operations, particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical are participating extensively in the use of radio.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both mobile and point-to-point radio fields.

The telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Restricted common-carrier mobile radio service (this service to vehicles does not permit interconnection with the over-all telephone system but only with specific dispatchers) is available in most major cities in Canada as well as in a number of smaller urban centres. The latter service is provided by telephone companies as well as by other organizations. In 1962 a General Radio Service was established authorizing the licensing of low-power radio stations to permit short distance personal and private business radiotelephone communications. This new service has proved quite popular, nearly 14,000 licences having been issued during 1962-63.

Subsection 9.—Radio and Television Broadcasting*

Broadcasting in Canada has developed over a period of some forty-five years as a combination of public and private enterprise. Since the opening program from the first radio station was beamed into a few Montreal homes in 1918, the role of the radio and television program in the daily life of the Canadian family has grown to startling prominence. Today, radio service reaches 98 p.c. and television service about 92 p.c. of the Canadian population.

*Textual information in this Subsection was supplied by the Canadian Broadcasting Corporation, the Board of Broadcast Governors and the Canadian Association of Broadcasters; statistical data were prepared by the Public Finance and Transportation Division of the Dominion Bureau of Statistics.

To have become such an integral force in the daily life of the nation, broadcasting had to learn the needs of the people and how to serve them. Two official languages forming two distinct cultures had to be served independently but without diminishing the concept of national unity. Dozens of other smaller groups, distinct in culture and frequently dwelling in the same radio or TV coverage area but in separate communities with widely divergent program interests, had to be served. Physical problems of distance and geography had to be overcome. It requires some 360 radio transmitters and 105 TV stations and satellites to reach a population distributed across a 4,000-mile southern frontier, through seven time zones and a variety of topographical and climatic regions, and scattered northwest through thousands of square miles to the shores of the Arctic Ocean. Not only do these people have local service that is a reflection of life in their own districts, but by means of 15,000 miles of land-lines for radio networks and 8,500 miles of microwave circuits for television nearly every Canadian may, at the same time, listen or watch as an event of national interest takes place.

Since 1932, a publicly owned body, now known as the Canadian Broadcasting Corporation, created to develop a national service, has worked with the private or independent station-owner to establish this service. A more recent addition (1958) is the Board of Broadcast Governors, which consists of three full-time members including the Chairman and Vice-Chairman and 12 part-time members; the function of the Board is to "regulate the establishment and operation of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them, and provide for the final determination of all matters and questions in relation thereto". (See also p. 105.) The Canadian Broadcasting Corporation consists of a President and a Vice-President and nine other directors appointed by the Governor in Council. It is accountable to Parliament through a Cabinet Minister designated by the Governor in Council and is empowered to establish and maintain program networks and stations. (See also pp. 117-118.)

The Broadcasting Act also requires that, before dealing with any application for a licence to establish a broadcasting station (private or public) or for an increase in power, change of frequency or change of location of a broadcasting station, the Minister of Transport must receive a recommendation from the Board of Broadcast Governors. The same requirement exists with respect to the making of a new regulation or effecting changes in the regulations under the Radio Act. Before making the appropriate recommendation to the Minister of Transport, the Board considers all such applications at a public hearing at which the applicant, licensees and the Canadian Broadcasting Corporation are given the opportunity of being heard.

Under the provisions of the Radio Act, the Minister of Transport must also receive a recommendation from the Board before dealing with any application to change the ownership or control of any share of capital stock in the licensee of a broadcasting station which is incorporated as a private company. The Board of Broadcast Governors has established a policy that any such application, which would result in a change of ownership or control of a licensee, would be referred to a public hearing before a recommendation is made to the Minister. Applications of this kind not involving a change of ownership or control may be dealt with by the Board or the Executive Committee of the Board at a regular meeting.

Under the provisions of the Broadcasting Act, the Board has issued the Radio Broadcasting Stations Regulations and the Radio (TV) Broadcasting Regulations applying to radio and television stations respectively; these regulations cover all aspects of station operation and the enforcement of them as the responsibility of the Board.

Broadcasting Facilities.—As of Apr. 1, 1963, there were in operation in Canada some 38 CBC radio stations plus another 100 low-power relay transmitters maintained by the Corporation, and 14 CBC television stations plus about 95 rebroadcasting and network relay stations. On the same date there were 261 privately owned radio stations in operation

and 134 privately owned television broadcasting and relay stations. All but 11 of the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over networks operated by the CBC. Of the 11 unaffiliated private television stations, nine form the Canadian Television Network (CTV) which commenced operating in the fall of 1961. The other two stations, in Hamilton and Montreal, are independent of any network affiliation. Of the 261 private radio stations, 219 were AM standard band stations, 36 were FM stations and six were shortwave stations; 12 of the 36 FM stations operated on the new Multiplex Stereophonic system.

Operations of the Canadian Broadcasting Corporation, 1962-63*

Television.—The CBC in 1962 celebrated its tenth anniversary in television. During the year, as a direct result of new stations being placed in operation and improvement to existing stations, CBC television became available to an additional 247,000 Canadians and service extended to reach about 92 p.c. of the Canadian population. Making service available to the other 8 p.c. is becoming increasingly difficult and expensive since many of them live in isolated communities sometimes thousands of miles from the main east-west lines of communication. The expansion during 1962 was into the northern areas where costs were not too prohibitive. New rebroadcasting stations were completed at Grande Prairie and Peace River in Alberta, The Pas in Manitoba, Dryden and Sioux Lookout in Ontario, and Courtenay in British Columbia, and rebroadcasting stations of the French network were completed at Sudbury in Ontario and Timiskaming in Quebec. A kinescope-programmed station was completed at Flin Flon in Manitoba and a new network relay station began operating at Cranbrook, B.C. Many projects to improve or extend service were under way at the end of the year. Notable among them were the new Head Office building at Ottawa, consolidation of facilities at Toronto and Montreal, relocation and increase in power of the CBLT transmitter and tower at Toronto, and a network relay centre at Winnipeg.

The complexities of CBC television broadcasting have greatly increased in recent years in the administrative area and as a result of the setting up of an entirely separate, wholly commercial television network (CTV). Of significance, too, are the recently expanding activities of community antenna television service (CATV)—operated by unlicensed systems which pick up programs produced by licensed television stations from the air and distribute them by means of cable to subscribers who pay a fee for the service—and the changing role of the rebroadcasting stations. Both systems were developed originally to bring service to remote communities but the implications of their use in already serviced communities is beginning to emerge. The future of the CATV service was discussed at a public hearing of the Board of Broadcast Governors in June 1963.

With coverage gaps narrowing, the CBC is turning its attention more and more to improvement of facilities and programming to fulfil its basic purpose of maintaining a complete service with a wide range of fare for all tastes, bringing Canadians in widely separated parts of the country closer together and serving the various geographical regions equitably.

Armed Forces Service.—The Armed Forces Service arranged the supply of a weekly package of kine-recordings of popular CBC television programs to bases of the Canadian Armed Forces in Europe, the Middle East and the Congo and, for the third season, organized a tour of a CBC Concert Party to the NATO bases in France and Germany and to the UNEF bases in the Middle East. Live coverage of major news and sports events, such as the federal elections in June 1962 and April 1963 and the Grey Cup, was also provided to bases in France and Germany through transatlantic cable.

*The establishment and growth of CBC radio and television facilities throughout the years is covered in previous editions of the Year Book; developments taking place during 1962 and early 1963 only are covered here.

Radio.—A milestone in the long history of CBC radio was reached on Oct. 1, 1962, with the inauguration of the new CBC Radio Network consolidating the English-language Trans-Canada and Dominion Networks. The purpose of the consolidation was to provide a schedule of broadcasting balanced in terms of subject matter and of the relative positioning of spoken word and music within each program day. To a large extent, the programs of the new network are carried by microwave facilities, thus providing a quality and reliability not previously attained by radio network operations.

During the year, English radio network was extended to new low-power relay transmitters at Noranda in Quebec, Andover and St. Stephen in New Brunswick, Uranium City in Saskatchewan and Nakusp in British Columbia. The French network was extended to service new low-power relay transmitters at Hearst in Ontario and Wedgeport in Nova Scotia and to three privately owned affiliated stations at Trois Rivières, Roberval and La Tuque in Quebec. CBC stations at Halifax and Sydney in Nova Scotia and at Grand Falls in Newfoundland were increased in power.

Because of budget restrictions arising out of the Government's austerity program, the experimental FM network between Toronto, Ottawa and Montreal was closed on Oct. 31, 1962. However, the experience gained during its thirty months of operation was of great benefit to both the Corporation and the network supplier. The three stations are broadcasting AM service with some separate FM programming included on a non-network basis until finances permit resumption of FM network services.

In 1962 the CBC developed an emergency broadcasting plan to meet its responsibilities in connection with the Emergency Measures Organization, making it possible for every radio and television station in Canada to be connected within five minutes to emergency radio networks in order to broadcast instructions and information to the public in the event of a national emergency. This service was suspended in the fall but reactivated on June 30, 1963.

Northern Service.—The Northern Service, established in 1958, extends the national radio broadcasting system to the Yukon and Northwest Territories and to the northern portions of all provinces except the Maritimes. With the recent addition of a third high-power transmitter at Sackville, N.B., the Northern Service shortwave schedule was increased from eight to nine and one-half hours daily. In addition to the CBC network programs provided on shortwave, the Northern Service produced programs of special interest to its listeners, such as *Uqausi*, an Eskimo-language program of messages, news, views and music prepared by Eskimo personnel, *Arctic Window*, a program of interviews with visitors to the North, and *The Commissioner Replies* on which questions submitted by residents are answered on the air by the Commissioner of the Northwest Territories. A number of programs prepared with the co-operation of the Northern Service were carried on the full CBC radio network, including programs originating from the Dawson City Festival held in the summer of 1962. Tape recordings of National Service programs were supplied to a number of RCAF and Mid-Canada line stations which had their own low-power radio stations.

International Service.—The CBC International Service is operated on behalf of the people of Canada to provide information about this country to listeners in other lands. Shortwave programs are broadcast in 11 languages daily to Europe, Africa, Latin America, the Caribbean, Australia and New Zealand. Despite the fact that television is being introduced in more and more countries, radio broadcasting and listening show no signs of decreasing. In fact, radio broadcasting, both medium and shortwave, is being expanded particularly in those underdeveloped countries that have recently achieved nationhood.

A notable fact on the international broadcasting scene is the growing interest in the exchange of programs, which opens up wider possibilities for the CBC International Service in the realm of music and also in the area of special events where rapid transmission is vitally important. All sections of the International Service prepared programs dealing with the political developments in Ottawa, including the dissolution of the 25th Parliament; the German-language section, for example, relayed twice as many programs to the German

networks as it did in the preceding year. Twenty-four items on cultural and sports topics were shipped to Radio Moscow and virtually all of them were heard by Russian listeners. Programs for philatelists continued to generate great interest and the programs, broadly classified under the heading of *Letter Box*, on which listeners' mail is answered on the air, found a wide audience. News, news reports and commentaries continued to be the mainstay of the shortwave service. The monthly 15-minute television program *Canada Magazine* was distributed to an increased number of broadcasting organizations.

International Relations.—In mid-1962, the launching of *Telstar* heralded the coming era of 'live' international television. Meantime, the CBC has recently increased its contracts with other broadcasting organizations in the world in anticipation of increasing television exchanges, which will be done initially by means of television recordings. A healthy exchange of programs with many countries is already in progress both in television and radio. For example, most countries have contributed teen-age radio programs to CBC's *Countdown* series. Commonwealth countries show particular interest in CBC drama, Europe in variety programs, Japan in sports, and Russia in farm and fisheries. French-language program exchanges have been most active, particularly with Belgium and Switzerland. In April 1963, CBC delivered its third contribution to a series of high-quality documentaries being produced for TV by Intertel, a four-nation (Britain, Australia, United States and Canada) partnership.

In May 1963, Canada for the first time acted as host for a Commonwealth Broadcasting Conference. This event was the fifth conference of its kind, and the meetings were held in Montreal and Montebello, Que., Toronto, Ont., and Banff, Alta. Fourteen publicly owned national broadcasting organizations of the Commonwealth were represented. Delegates discussed matters of mutual concern and interest in the programming and engineering field, as well as legal and other problems affecting broadcasting as a whole.

CBC activities in the field of external aid involving co-operation in training, instruction and secondment date back for many years. Recently, however, these activities have increased markedly, mainly because of the determination of the developing countries of Asia and Africa to bring to fruition their plans for broadcast communication services. For instance, two senior employees are spending two years in Ghana, working toward the development of television service in that country which will start in 1964; 26 Ghanaians are being given preliminary training in Ghana before coming to Canada for advanced training with the CBC. Also, a CBC senior program officer is acting as adviser to the Director of TV in Malaya and a number of Malaysians will later be trained in Canada. Other less formal assistance has been given to countries of the West Indies, to British Guiana, Israel, Nigeria, Formosa and Japan, and requests for assistance have been received from such countries as Cambodia, Morocco, Jamaica and Viet Nam.

Finance.—The CBC, being a Crown corporation, is financed through public funds authorized by Parliament and through commercial advertising. In 1962, commercial revenue accounted for about 30 p.c. of the Corporation's income. However, the advent of many privately owned second stations and the second TV network has had an adverse effect on CBC commercial returns. It should be pointed out that such revenue cannot be expected to grow significantly beyond present levels, since there are no large untapped sources of advertising revenue available to television and the CBC continues to follow a policy whereby certain programs are not available for sponsorship (including news, talks and public affairs, farm and fisheries broadcasts, school broadcasts, religious and institutional broadcasts) and also deliberately restricts the quantity of commercial messages. The Corporation's efforts to increase commercial revenues are at no time allowed to influence its program decisions.

The following statement of operations shows a 0.7-p.c. increase in expenditures in 1962-63 over the previous year to the amount of \$108,365,882. The first estimates of net operating requirements from public funds amounted to \$74,994,000 which was subsequently reduced to \$73,994,000 as a result of the economy program introduced in July 1962.

This amount was under-expended by \$1,339,262. Advertising revenues at \$30,846,627 showed a 6.3-p.c. reduction from 1961-62, which accounted for much of the increase in net operating expenditures.

8.—Financial Statement of CBC Operations, Years Ended Mar. 31, 1962 and 1963

Item	1961-62	1962-63
	\$	\$
Expenses—		
Production and Distribution—		
Cost of programs.....	68,261,465	70,005,498
Network distribution.....	10,061,504	10,145,968
Station transmission.....	3,893,146	4,029,540
Payment to private stations.....	4,651,069	4,334,789
Commissions to agencies and networks.....	4,020,207	3,872,204
Emergency broadcasting.....	13,182	282,540
Operational supervision and services.....	8,642,942	8,420,592
Selling and Administration—		
Selling expense.....	1,540,736	1,646,990
Engineering and development.....	943,128	1,080,411
Management and central services.....	4,483,775	4,541,350
Totals, Expenses.....	107,611,154	108,365,882
Income—		
Parliamentary grant.....	70,252,273	72,654,738
Advertising revenue (gross).....	32,910,118	30,846,627
Interest on investments.....	185,291	253,898
Miscellaneous.....	224,431	302,067
Totals, Income.....	103,572,113	104,057,330
Depreciation included with total expenses.....	4,039,041	4,308,552
	107,611,154	108,365,882

Statistics of the Radio and Television Broadcasting Industry.—In 1961, for the first time, the Dominion Bureau of Statistics co-operated with the Board of Broadcast Governors and the Department of Transport in obtaining financial and other statistics of the Canadian radio and television broadcasting industry, summary results of which are given in the following tables. This co-operation made available much more detailed information than was possible previously; the figures given for earlier years were adjusted to make them comparable with those presented for 1961. Table 9 covers the operations of the whole industry, including the CBC and Table 10 gives the main items separately for radio and television broadcasting.

The operating revenue of the broadcasting industry in 1961 amounted to \$110,600,000, an increase of 6 p.c. over the previous year. Of this total, radio broadcasting contributed 46.6 p.c. as compared with 49.4 p.c. of the total revenue in 1960. Advertising revenues rose about 4 p.c. during the year. With the advent of eight new privately owned TV stations, more revenue was received from local and national advertising and from advertising carried by private networks than in 1960, but less was received from advertising carried on the publicly operated networks of the CBC; there was an increase of 9.3 p.c. in revenues from privately operated networks and national advertising, an increase of 8.9 p.c. from local advertising, and a decrease of 13.8 p.c. from public network advertising.

Operating expenditures in 1961 reached a total of \$181,000,000, an increase of 15 p.c. over 1960. The higher rate of increase in expenditures than in revenues changed the overall operating profit of \$6,076,000 recorded in 1960 to a loss of \$228,000 in 1961. After adjusting the operating profit or loss on account of other income and expenses and income taxes paid by the profitable firms, the final net loss of the private sector of the broadcasting industry for 1961 amounted to \$2,700,000 compared with a profit of \$5,000,000 in 1960. There are no CBC profits or losses in the figure of net income before taxes because the unexpended balance of the Parliamentary grant is treated as an account due to the Government of Canada.

9.—Revenue, Expenditure and Employee Statistics of the Radio and Television Broadcasting Industry, 1956-61

Item	1956	1957	1958	1959	1960	1961
	\$	\$	\$	\$	\$	\$
Operating Revenue and Grants						
Broadcasting Revenue from—						
Advertising carried on publicly-operated networks.....	14,717,133	19,097,332	19,640,855	24,457,000	24,239,000	20,966,918
Privately-operated network and national advertising.....	23,852,732	27,877,972	32,407,233	37,818,000	40,679,000	44,470,753
Local advertising.....	26,921,305	26,958,334	29,293,009	33,464,000	35,323,000	38,472,015
Non-broadcasting revenue.....	956,968	3,183,950	4,020,511	4,132,000	4,142,000	6,679,486
Grants.....	37,191,971	41,177,181	54,120,031	52,300,000	59,289,000	70,252,273
Totals, Operating Revenue and Grants.....	103,640,109	117,294,769	139,481,639	152,171,009	163,672,000	180,841,445
Operating Expenditure¹						
Representative agency commissions.	2,133,159	2,723,093	3,071,858	3,533,000	3,880,000	4,303,323
Interest charges.....	..	..	..	..	..	1,902,593
Depreciation and amortization of leasehold improvements.....	..	..	..	..	..	6,218,805
Rent, repairs and maintenance, property taxes, fuel and electricity.....	..	..	..	..	..	11,904,467
Salaries and wages.....	40,115,689	47,288,044	53,624,775	59,343,000	65,519,000	74,970,241
Benefits.....	..	..	..	..	..	3,539,240
Artists' and other talent fees.....	10,525,260	8,555,108	10,226,194	14,837,000	16,422,000	18,650,171
Performing rights.....	..	..	..	..	..	5,647,731
Telephone and telegraph and outside services.....	..	..	..	..	..	16,511,189
Films, tapes, recordings—rental and purchased.....	..	..	..	..	..	17,617,993
Advertising and promotion.....	..	..	..	..	..	4,583,559
Taxes and licences (other than income or property).....	..	..	..	..	..	1,293,566
Other.....	41,289,426	61,134,951	61,749,748	65,397,000	71,775,000	13,926,095
Totals, Operating Expenditure	94,063,534	119,701,196	128,672,575	143,110,000	157,596,000	181,068,973
Net operating income.....	+9,576,575	-2,406,427	+10,809,064	+9,061,000	+6,076,000	-227,528
Net of other income and other expenses.....	-2,663,062	-208,413	+73,377	+3,636,000	+3,790,000	+1,057,260
Income taxes.....	..	1,042,785	4,377,585	5,671,000	4,858,000	3,504,289
Net income after taxes.....	..	-3,657,625	+6,504,856	+7,026,000	+5,008,000	-2,674,557
Average monthly number of employees.....	10,498	11,930	12,896	13,241	13,885	15,514

¹ Excludes advertising agency commissions which were estimated to be \$10,636,328 in 1961.

10.—Summary Revenue, Expenditure and Employee Statistics of the Radio and Television Sectors of the Broadcasting Industry, 1961

Item	Radio	Television	Total
	\$	\$	\$
Operating revenue.....	69,708,356	111,133,089	180,841,445
Advertising.....	49,828,039	54,081,647	103,909,686
Grants.....	18,200,033	52,052,240	70,252,273
Other.....	1,680,284	4,999,202	6,679,486
Operating expenditure.....	66,904,979	114,163,994	181,068,973
Net operating revenue.....	2,803,377	-3,030,905	-227,528
Average monthly number of employees.....	6,130	9,384	15,514

Section 2.—The Post Office

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with security and dispatch. In discharging these duties it maintains post offices and utilizes air, railway, land and water transportation facilities. Associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting for COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its widespread facilities, it has been found expedient for the Post Office to assist other government departments in the performance of certain tasks including the sale of unemployment insurance stamps, the collection of government annuity payments, the distribution of income tax forms and Civil Service employment application forms, and the display of government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all of the functions of the city office. In larger urban areas postal stations and sub-post offices have full functions similar to the main post office, including a general delivery service, lock-box delivery and letter-carrier delivery.

At Mar. 31, 1962 there were 11,401 post offices in operation compared with 11,421 in 1961. Letter-carrier delivery, performed in 180 urban centres, employed over 8,400 uniformed letter carriers. Postage paid in 1961-62 by means of postage stamps amounted to \$88,573,175 as compared with \$85,807,987 in 1960-61. Post office money orders, issued for any amount not exceeding \$100 and payable in almost any country of the world, were sold at more than 8,800 post offices and money orders payable in Canada only, for amounts not exceeding \$15.99, were sold at some 1,900 additional post offices. Post Office Savings Banks operate in all parts of the country and, on Mar. 31, 1962, had deposits totalling \$27,365,119.

The Operating Service of the Post Office Department is organized into 14 Districts, each under a District Director. Ten of the Districts report directly to the Assistant Deputy Postmaster General. In addition, there are two Regions, each consisting of two Districts and a major Post Office, under a Regional Director. These also report to the Assistant Deputy Postmaster General who has the responsibility of conducting the normal field operations of the Postal Service. The operating and support functions required in the provision of postal service to the public are the responsibility of the local postmasters who receive technical and administrative assistance from District Offices located at strategic points.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont., (the most southerly inhabited point of Canada) to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily, intersected by branch and connecting lines radiating to every quarter and linking up with the United States airmail system. All first-class domestic mail up to and including eight ounces in weight is carried by air between one Canadian point and another, whenever delivery can thus be expedited. Air stage service provides the only means of communication for many areas in the hinterland. There were approximately 43,175 miles of airmail and air stage routes in Canada in 1962 compared with 41,825 miles in 1961. However, the railways are the principal means of mail transport; the railway mail service operates along 21,670 miles of track and, in 1962, covered more than 35,050,000 service-miles. A staff of 619 mail clerks prepared the mails for delivery and dispatch while en route in railway mail cars.

The rural mail delivery organization provided direct postal service over approximately 5,637 rural mail routes in 1962, extending over 145,493 route-miles and serving 550,703 rural mail boxes. Rural mail routes are generally circular in pattern and average about 26 miles in length. About 1,913 side services were in operation to transport mail between post offices, railway stations, steamer wharves and airports, and 1,904 stage services operated to convey mail to and from post offices not located on railway lines. Transportation

of mail by motor vehicle on highways is expanding and over 390 such services were in operation in 1962, many of them replacing or reducing conveyance by rail. In 1962 there were 932 city mail services transporting mail to and from post offices, postal stations and sub-post offices, collecting mail from street letter-boxes and delivering parcel post. The 9,454 land-mail service couriers employed travelled approximately 54,000,000 miles during the year; land-mail services are performed under a contract system. Coastal mail service is also conducted under contract; 29 contractors operated as far north along the West Coast as Alaska and on the East Coast to the northern part of Labrador in 1962.

The larger post offices in Canada may be described as intricate industrial plants where mail is unloaded, cancelled, transported and shipped by semi-automatic means. Conveyor belts, automatic chutes and other devices increase output of mail matter without increasing staff and all the larger offices are provided with the latest mechanical equipment. In some areas household mail is carried by mailmobile. In most cities, postage stamps may be obtained at any time from automatic vending machines and a curbside mail receptacle (snorkel) in which patrons may deposit mail without leaving their automobiles is coming into use. Electronic equipment checks money orders and accounts for the \$900,000,000 annually that they represent.

Post Office Statistics.—Tables 11 and 12 give the numbers of post offices in operation, together with revenue and expenditure for recent years.

11.—Post Offices in Operation, by Province, as at Mar. 31, 1958 and 1962

Province	1958	1962	Province or Territory	1958	1962
	No.	No.		No.	No.
Newfoundland.....	641	660	Saskatchewan.....	1,310	1,266
Prince Edward Island.....	105	107	Alberta.....	1,112	1,070
Nova Scotia.....	1,096	869	British Columbia.....	937	916
New Brunswick.....	678	555	Yukon Territory.....	16	20
Quebec.....	2,413	2,414	Northwest Territories.....	36	40
Ontario.....	2,616	2,680			
Manitoba.....	810	804	Canada.....	11,763	11,401

12.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1958-62

NOTE.—Figures from 1863 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Gross Revenue	Net Revenue ¹	Expenditure ²	Surplus (+) or Deficit (—)
	\$	\$	\$	\$
1958.....	177,492,783	152,919,881	153,319,782	—399,901
1959.....	183,380,508	157,630,336	157,803,478	—173,142
1960.....	193,659,715	167,629,053	165,792,339	+1,836,714
1961.....	202,003,790	173,645,658	178,371,716	—4,726,058
1962.....	213,517,994	183,678,936	185,019,700	—1,340,764

¹ Gross revenue less commissions and allowances to postmasters, and other small items.
rental of semi-staff and staff post offices.

² Excludes

The gross revenue receipts shown in Table 12 are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during 1961-62, was \$88,573,175 and receipts from postage meter or postage register impressions and postage paid in cash by other means amounted to \$109,999,967.

Auxiliary Postal Services.—Auxiliary postal services include the issuing of money orders and the operation of the Post Office Savings Bank.

Table 13 shows the amount of money order business conducted by the postal service in recent years. A statement on the financial business of the Post Office Savings Bank will be found in Chapter XXIII on Currency and Banking.

13.—Operations of the Money Order System, Years Ended Mar. 31, 1958-62

Year	Money Order Offices in Canada	Money Orders Issued in Canada	Value of Orders Issued in Canada	Value Payable in—		Value of Orders Issued in Other Countries, Payable in Canada
				Canada	Other Countries	
	No.	No.	\$	\$	\$	\$
1958.....	10,934	52,898,954	845,647,439	818,333,292	27,314,147	5,394,568
1959.....	10,823	53,746,050	853,443,891	825,973,053	27,470,837	5,026,970
1960.....	10,778	54,953,087	868,669,133	840,584,556	28,084,576	5,250,922
1961.....	11,098	55,939,421	886,976,976	858,278,412	28,698,563	5,505,224
1962.....	10,708	56,252,265	893,512,291	867,182,785	26,329,506	5,940,795

Section 3.—The Press*

Daily newspapers published in Canada numbered 115 in 1962, counting morning and evening editions separately. English and French dailies had an aggregate reported circulation of more than 4,146,000—about 82 p.c. in English and 18 p.c. in French. Thirteen of those with circulations in excess of 100,000 accounted for over 55 p.c. of the circulation. French dailies, as would be expected, have their widest circulation in Quebec where nine of the 11 in existence in 1962 were published. Some of the largest of these papers have been established in that province for over 60 years. Weekly newspapers serve more people in rural communities than do the dailies. They cater to local interests and exercise an important influence in the areas they serve.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 100 members with world and Canadian news and news photographs, mostly by means of teletype and wirephoto transmission. It also serves weekly newspapers and radio and television stations. It is, in effect, a partnership through which each member newspaper provides its fellow members with the news of its particular area and through which the general news of the world is brought to Canada. Cost of editing and transmission is divided among members according to the population of the cities in which they publish. CP gets world news from Reuters, the British agency, and from the Associated Press, the United States co-operative, and these agencies have reciprocal arrangements with CP for their coverage of Canada.

The United Press International (British United Press) is a limited company in Canada and maintains a close association with the UPI World Service, of which it is an affiliate. From its headquarters in Montreal, it provides Canadian news for general world distribution as well as for 163 subscribers including 65 private broadcasting stations in Canada. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

*An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to the date of writing (1958). The complete presentation is available in reprint form from the Dominion Bureau of Statistics.

Press Statistics.—The following tables are based on data estimated from *Canadian Advertising*. Circulation figures are given for daily English-language and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation; for these, ABC 'net paid' figures have been used. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable.

14.—Estimated Numbers and Circulations of reporting English-Language, French-Language and Foreign-Language Newspapers, by Province, 1961 and 1962

Province or Territory	1961				1962			
	Daily		Weekly ¹	Week-end	Daily		Weekly ¹	Week-end
	No.	Circulation ²	No.	No.	No.	Circulation ²	No.	No.
ENGLISH-LANGUAGE NEWSPAPERS								
Newfoundland.....	3	27,366	4	1	3	27,802	5	1
Prince Edward Island.....	3	26,275	—	—	3	26,131	—	—
Nova Scotia.....	6	151,958	28	—	6	154,351	28	—
New Brunswick.....	5	86,470	14	—	5	88,053	13	—
Quebec.....	4	326,011	23	1	4	331,138	20	1
Ontario.....	46	1,697,024	241	3	47	1,719,446	235	4
Manitoba.....	6	208,820	66	—	6	216,111	64	—
Saskatchewan.....	4	107,639	154	—	4	110,467	122	—
Alberta.....	6	258,754	107	—	6	268,942	101	2
British Columbia.....	14	439,445	87	—	14	453,431	91	—
Yukon and Northwest Territories.....	—	—	3	—	—	—	3	—
Totals.....	97	3,329,762	727	5	98	3,395,872	682	8
FRENCH-LANGUAGE NEWSPAPERS ³								
Nova Scotia.....	—	—	1	—	—	—	1	—
New Brunswick.....	1	10,951	2	—	1	10,884	2	—
Quebec.....	10	689,525	157	13	9	705,147	165	14
Ontario.....	1	34,223	5	—	1	34,482	5	—
Manitoba.....	—	—	1	—	—	—	1	—
Saskatchewan.....	—	—	3	—	—	—	3	—
Alberta.....	—	—	1	—	—	—	1	—
Totals.....	12	734,699	170	13	11	750,513	178	14
FOREIGN-LANGUAGE NEWSPAPERS ⁴								
Quebec.....	1	..	6	—	1	..	5	—
Ontario.....	2	..	38	—	2	..	42	—
Manitoba.....	—	—	16	—	—	—	15	—
Alberta.....	—	—	1	—	—	—	1	—
British Columbia.....	3	..	1	—	3	..	1	—
Totals.....	6	..	62	—	6	..	64	—

¹ Includes semi-weeklies, tri-weeklies and bi-weeklies.

² Circulation not reported for all newspapers.

³ Includes bilinguals.

⁴ All daily and weekly foreign-language publications given here are considered to be newspapers.

CHAPTER XIX.—DOMESTIC TRADE AND PRICES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad and complicated; it encompasses all values added to commodities traded, provincially and interprovincially, by agencies and services connected with the storage, distribution and sale of goods, such as railways, steamships, warehouses, wholesale and retail stores, financial institutions, etc. Taken in a wide sense, it embraces various professional and personal services including amusement services, such as theatres and sports. Only certain phases of this broad field are covered here and, wherever possible, cross references are given to related material appearing in other Chapters. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various angles. The index will be found useful in this respect.

Section 1.—Merchandising and Service Establishments*

The surveys of merchandising and service establishments centre around a census of such business establishments which in the past has been conducted every ten years. The

* Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.

first census of this kind related to business transacted for the year 1930 and similar censuses were taken for 1941, 1951 and 1961. Only the first classifications of retail trade (by provinces, counties or census divisions, and urban centres of 30,000 or more population) were available at the time of preparation of this Section (see Subsection 1). It is noteworthy that the scope of the data collected in 1961 was widened. Gross margin information was collected from retail stores and wholesalers; operating expense figures were collected from wholesalers and service businesses; and more information was sought about the operating characteristics of retailers and wholesalers. Reports giving detailed results of the census, classifying retail, wholesale and service establishments by geographic areas, kinds of business and types of operation—including such data as number of establishments, sales, employment and payrolls, and inventories and commodities for the retail and wholesale trades—are scheduled to begin appearing late in 1963.†

Census information is supplemented in intercensal years by monthly, quarterly and annual surveys on the more important phases of the retail, wholesale and service trades—sample surveys for some businesses and full coverage for others. The 1951 Census formed a new base for such surveys and certain improvements have been implemented for continuance during the 1951-61 intercensal period. Current information available on the distributive trades is given in Subsections 2, 3 and 4 and continues to project the 1951 base. Data related to the new 1961 base will be available early in 1965. Estimates for the years prior to 1951 have been revised in accordance with the census base.

Subsection 1.—1961 Census of Merchandising and Service Establishments

As stated above, the only results available from the 1961 Census of Merchandising and Service Establishments at the time of preparation of this Chapter were those of retail trade classified by counties or census divisions, by provinces and by incorporated urban centres of 30,000 or more population. The two latter classifications are given in Tables 1 and 2, respectively.

It should be noted that figures for 1961 are not directly comparable with 1951 Census information as summarized in the 1955 Year Book, pp. 953-977, since certain classifications were excluded from retail trade in 1961 and others added. Restaurants, lumber dealers, farm implement dealers and feed stores were included in 1951 but not in 1961; all automotive repair shops, radio and television repair and jewellery repair were included in 1961 as part of retail trade but in 1951 were considered service trades. It should also be noted that the total retail trade as reported by the census does not coincide with the total shown in Tables 4 and 5 of Subsection 3; the latter is estimated from sample surveys, whereas the census is a full-coverage survey.

† Vol. VI (Pt. 1) Census of Merchandising: Retail Trade (Series 6.1). Vol. VI (Pt. 2) Census of Merchandising: Wholesale Trade; Services (Series 6.2).

1.—Number of Retail Stores and Value of Sales and Inventory, by Province, Census 1961

Province or Territory	Stores	Sales	Inventory at Year-End
	No.	\$'000	\$'000
Newfoundland.....	4,747	285,568	49,948
Prince Edward Island.....	867	78,801	10,678
Nova Scotia.....	6,523	580,335	73,194
New Brunswick.....	5,215	435,806	55,350
Quebec.....	45,273	4,107,952	532,830
Ontario.....	52,157	6,206,685	733,955
Manitoba.....	6,575	766,711	100,022
Saskatchewan.....	7,591	734,492	118,265
Alberta.....	9,902	1,272,395	177,621
British Columbia.....	13,558	1,575,161	212,435
Yukon and Northwest Territories.....	212	29,044	7,600
Canada.....	152,620	16,072,950	2,071,898

**2.—Number of Retail Stores and Value of Sales and Inventory in Urban Centres
of 30,000 or More Population, Census 1961**

Province and Urban Centre	Stores	Sales	Inventory at Year-End	Province and Urban Centre	Stores	Sales	Inventory at Year-End
	No.	\$'000	\$'000		No.	\$'000	\$'000
Newfoundland—				Ontario—concluded			
St. John's.....	578	95,002	13,568	Guelph.....	371	47,027	5,455
Nova Scotia—				Hamilton.....	2,227	313,247	33,538
Dartmouth.....	250	48,112	4,499	Kingston.....	470	73,871	8,720
Halifax.....	692	138,297	20,874	Kitchener.....	605	96,724	10,612
Sydney.....	326	48,152	5,541	London.....	1,349	238,212	33,048
New Brunswick—				Oshawa.....	459	76,415	7,844
Moncton.....	355	63,812	7,324	Ottawa.....	1,730	342,168	38,635
Saint John.....	541	77,956	9,572	Peterborough.....	372	64,470	7,232
Quebec—				Port Arthur.....	331	57,005	6,619
Chicoutimi.....	269	45,326	6,213	St. Catharines.....	788	93,309	11,829
Chomedey.....	176	28,426	2,957	Sarnia.....	417	59,700	7,894
Granby.....	341	28,904	3,703	Sault Ste. Marie.....	403	69,594	8,954
Hull.....	390	45,020	4,326	Sudbury.....	585	112,357	11,154
Jacques Cartier.....	286	26,251	2,367	Toronto.....	7,610	1,147,007	136,048
Lachine.....	295	27,376	3,593	Welland.....	378	39,033	4,875
LaSalle.....	148	16,281	1,688	Windsor.....	1,123	124,843	18,398
Montreal.....	10,070	1,409,943	167,618	Manitoba—			
Montreal North.....	274	21,200	2,151	St. Boniface.....	192	17,703	1,652
Outremont.....	114	21,736	1,163	St. James.....	131	15,585	1,412
Quebec.....	1,829	237,484	32,714	Winnipeg.....	2,051	400,697	48,416
St. Laurent.....	195	34,994	3,434	Saskatchewan—			
St. Michel.....	307	41,200	3,677	Moose Jaw.....	272	50,507	5,419
Shawinigan.....	358	28,919	4,007	Regina.....	656	132,189	21,295
Sherbrooke.....	622	78,575	9,205	Saskatoon.....	628	111,176	14,179
Trois Rivières.....	521	59,157	8,400	Alberta—			
Verdun.....	577	66,017	8,343	Calgary.....	1,656	329,984	41,755
Ontario—				Edmonton.....	1,704	357,504	47,863
Belleville.....	294	44,615	5,911	Jasper Place.....	123	18,215	1,597
Brantford.....	483	63,181	7,256	Lethbridge.....	329	55,149	7,880
Burlington.....	263	40,285	3,925	British Columbia—			
Cornwall.....	445	45,302	5,355	New Westminster....	363	70,860	10,663
Fort William.....	368	46,631	5,629	Vancouver.....	3,719	522,488	70,871
				Victoria.....	760	119,210	16,555

Subsection 2.—Wholesale Trade

Estimated sales of wholesalers expanded from \$5,784,400,000 in 1951 to \$8,897,100,000 in 1961. The figures given in Table 3 include only wholesalers proper, i.e., they exclude agents and brokers and manufacturers' sales branches. Sales estimates have been revised but have not been adjusted for price changes. The business of agents and brokers for the years 1957-59 is given in the 1962 Year Book, p. 869; no later figures are available.

3.—Wholesale Sales, by Kind of Business, 1957-61

NOTE.—Includes only wholesalers proper, i.e., firms performing the function of buying merchandise on their own account for resale.

Kind of Business	1957	1958	1959	1960	1961
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Fresh fruits and vegetables.....	237.2	263.5	279.5	288.4	294.0
Groceries and food specialties.....	1,263.8	1,385.1	1,544.5	1,649.7	1,736.0
Meat and dairy products.....	152.0	175.0	171.3	165.0	176.5
Clothing and furnishings.....	116.9	123.6	120.0	116.1	114.7
Footwear.....	30.9	33.5	37.1	38.0	39.3
Other textile and clothing accessories.....	186.3	198.2	211.5	204.6	206.6
Drugs and drug sundries.....	184.7	198.5	216.6	221.9	235.0
Household electrical appliances.....	161.3	166.4	181.4	182.7	209.3
Farm machinery.....	56.1	68.5	84.9	73.0	71.4
Coal and coke.....	183.0	163.6	155.9	153.3	136.9
Hardware.....	315.2	308.8	317.6	327.1	341.9
Construction materials and supplies including lumber.....	779.6	825.2	964.4	877.6	902.2
Industrial and transportation equipment and supplies.....	796.4	709.0	779.7	748.1	757.1
Commercial, institutional and service equipment and supplies.....	105.1	109.3	130.2	137.4	143.3
Automotive parts and accessories.....	342.1	363.9	407.9	414.8	412.6
Newsprint, paper and paper products.....	251.8	241.9	262.8	276.4	290.5
Tobacco, confectionery and soft drinks.....	635.8	679.2	723.4	741.1	761.0
Other.....	1,893.3	1,892.5	2,163.9	2,149.3	2,068.8
Totals, All Trades.....	7,691.5	7,905.7	8,752.6	8,764.5	8,897.1

Subsection 3.—Retail Trade

The trend of retail trade is one of the best general indicators of the economic condition of the country. It is through retail stores that most goods are ultimately sold and such sales reflect the financial strength of the consumer except in times of short supply. The estimated value of retail sales increased by 105.9 p.c. during the period 1949-62. Estimates, not adjusted for price changes, are shown by province in Table 4 for 1930, 1941 and 1951-62 and by kind of business for the latest five years in Table 5.

4.—Retail Trade, by Province, 1930, 1941 and 1951-62

NOTE.—Figures for 1931-40 are given in the 1957-58 Year Book, p. 938 and those for 1942-50 in the 1962 edition, p. 870.

Year	Atlantic Provinces ¹	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia ²	Canada ³
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1930.....	167	646	1,091	188	188	175	251	2,736
1941.....	279	820	1,388	193	189	228	318	3,415
1951.....	899	2,443	4,130	610	659	854	1,100	10,693
1952.....	982	2,635	4,383	651	764	939	1,177	11,532
1953.....	1,018	2,756	4,616	677	845	987	1,228	12,128
1954.....	1,025	2,798	4,634	637	758	964	1,249	12,066
1955.....	1,127	3,006	5,115	669	748	1,035	1,412	13,112
1956.....	1,211	3,322	5,499	700	812	1,159	1,594	14,298
1957.....	1,234	3,521	5,663	726	855	1,211	1,616	14,826
1958.....	1,290	3,647	5,934	754	914	1,275	1,631	15,444
1959.....	1,362	3,878	6,218	813	951	1,355	1,707	16,284
1960.....	1,430	3,944	6,313	843	938	1,366	1,668	16,502
1961.....	1,465	4,183	6,340	817	905	1,401	1,665	16,777
1962.....	1,501	4,444	6,551	858	963	1,471	1,784	17,571

¹ Newfoundland included from 1949.

² Includes the Yukon and Northwest Territories.

³ Totals

are not the exact addition of the components because of rounding of the figures.

5.—Retail Trade, by Kind of Business, 1958-62

Kind of Business	1958	1959	1960	1961	1962 ^a
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Grocery and combination stores.....	3,126	3,287	3,474	3,581	3,704
Other food and beverage stores.....	1,120	1,178	1,225	1,244	1,317
General stores.....	625	630	640	654	685
Department stores.....	1,345	1,420	1,454	1,503	1,561
Variety stores.....	315	331	350	371	383
Motor vehicle dealers.....	2,414	2,613	2,551	2,488	2,763
Garages and filling stations.....	1,037	1,104	1,145	1,212	1,239
Men's clothing stores.....	238	250	259	261	275
Family clothing stores.....	227	226	235	243	251
Women's clothing stores.....	265	273	277	283	291
Shoe stores.....	146	155	169	170	175
Hardware stores.....	318	326	326	328	339
Lumber and building material dealers.....	482	492	436	426	448
Furniture, appliance and radio dealers.....	566	581	547	548	560
Restaurants.....	543	567	569	573	586
Fuel dealers.....	326	342	324	317	328
Drug stores.....	383	405	416	428	436
Jewellery stores.....	133	137	134	134	136
Miscellaneous.....	1,838	1,967	1,971	2,012	2,094
Totals, All Trades.....	15,444	16,284	16,502	16,777	17,571

Retail Chain Stores.—Retail chains are defined as companies operating four or more retail outlets in the same or related kinds of business. The latest figures available are those for 1960 given in Tables 6 and 7. Operating results of selected kinds of chain stores and operating ratios of independent stores by kind of business for the same year are given in the 1962 Year Book at pp. 872-873.

6.—Retail Chain Store Statistics, 1930, 1941 and 1951-60

NOTE.—Figures for 1942-50 are given in the 1962 Year Book, p. 871.

Year	Stores	Net Retail Sales	Salaries and Wages Paid to Store Employees	Value of Stocks on Hand End of Year		Accounts Outstanding End of Year
				Stores	Warehouses	
	Av. No.	\$'000	\$'000	\$'000	\$'000	\$'000
1930.....	8,097	487,336	50,405	60,457	..	..
1941.....	7,622	639,210	57,777	68,619	20,976	38,376
1951.....	7,846	1,775,744	153,599	186,562	60,490	53,816
1952.....	7,766	1,924,873	154,642	172,886	55,215	77,475
1953.....	7,835	2,048,228	171,167	179,704	52,096	91,538
1954.....	8,136	2,146,635	181,509	191,049	57,814	102,747
1955.....	8,274	2,353,955	199,611	205,833	63,120	127,362
1956.....	8,559	2,647,055	221,136	232,392	72,183	143,357
1957.....	8,822	2,841,569	242,979	248,284	78,521	148,506
1958.....	9,122	3,073,147	262,456	265,862	78,512	158,232
1959.....	9,491	3,280,263	285,691	282,530	80,440	162,463
1960.....	9,954	3,468,413	382,099	304,230	94,528	175,048

7.—Retail Chain Store Sales, by Province and by Kind of Business, 1956-60

Province or Kind of Business	1956	1957	1958	1959	1960
	\$'000	\$'000	\$'000	\$'000	\$'000
Province					
Newfoundland.....	15,267	24,079	23,849	35,708	37,130
Maritime Provinces.....	169,946	179,396	190,928	198,095	217,966
Quebec.....	540,628	576,716	619,584	674,002	712,568
Ontario.....	1,230,388	1,335,056	1,451,325	1,508,626	1,579,018
Manitoba.....	100,591	112,126	120,715	131,908	142,482
Saskatchewan.....	111,353	118,935	128,762	137,037	140,077
Alberta.....	182,111	197,763	219,751	245,747	262,954
British Columbia.....	289,846	289,463	309,336	341,548	367,796
Yukon and Northwest Territories.....	6,925	8,034	8,897	7,592	8,422
Canada.....	2,647,055	2,841,569	3,073,147	3,280,263	3,468,413
Kind of Business					
Foods and Beverages¹.....	1,685,394	1,835,648	1,994,366	2,143,559	2,293,563
Grocery and combination stores.....	1,096,330	1,241,725	1,368,383	1,481,136	1,602,797
Meat markets.....	7,730	7,563	7,924	8,177	9,530
Restaurants.....	36,374	36,194	38,236	40,718	40,607
Alcoholic beverage stores.....	527,952	530,143	556,383	587,817	611,646
General Merchandise (excl. department stores)¹.....	313,976	338,645	357,199	379,638	413,209
General stores.....	41,144	42,774	42,513	44,290	48,820
Variety stores.....	229,307	247,223	264,298	282,591	298,157
Automotive.....	42,043	48,299	56,022	62,068	60,756
Apparel and Accessories¹.....	190,674	202,078	222,490	238,448	261,583
Men's and boys' clothing and furnishings.....	28,866	28,159	29,157	30,148	28,529
Women's clothing stores.....	67,269	70,707	78,147	81,357	84,269
Family clothing stores.....	36,347	40,459	44,958	50,373	65,291
Shoe stores.....	53,433	57,822	63,938	70,150	76,514
Building Materials and Hardware.....	141,316	140,534	154,151	155,923	148,324
Furniture and Household Appliances.....	137,059	130,727	133,301	132,083	117,871
Other Retail Stores¹.....	136,592	145,638	155,618	168,544	173,107
Drug stores.....	41,299	45,437	49,912	53,383	55,130
Jewellery stores.....	46,301	45,205	47,017	48,736	49,280

¹ Includes other kinds of business not shown separately.

New Motor Vehicle Sales.—Sales of new motor vehicles reached a peak in 1962 when 586,012 vehicles valued at \$1,784,460,000 were sold. Sales over the ten-year period 1953-62 are shown in Table 8.

8.—Retail Sales of New Motor Vehicles, 1953-62

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	\$	No.	\$	No.	\$
1953.....	359,172	899,728,000	103,354	262,745,000	462,526	1,162,471,000
1954.....	310,546	797,554,000	72,082	191,964,000	382,628	989,518,000
1955.....	386,962	1,023,351,000	78,716	232,539,000	465,678	1,255,890,000
1956.....	408,233	1,128,640,000	91,688	326,735,000	499,921	1,455,375,000
1957.....	382,023	1,087,620,000	76,276	281,811,000	458,299	1,368,931,000
1958.....	376,723	1,110,724,000	68,046	254,742,000	444,769	1,365,466,000
1959.....	425,038	1,240,961,000	77,588	299,207,000	502,626	1,540,168,000
1960.....	447,771	1,289,073,000	75,417	285,754,000	523,188	1,574,827,000
1961.....	437,319	1,290,026,000	74,160	261,382,000	511,479	1,551,408,000
1962 ^a	504,168	1,486,337,000	81,844	298,123,000	586,012	1,784,460,000

Farm Implement Sales.—The value, at wholesale prices, of new farm implements and equipment sold in 1961 amounted to \$201,777,000, a decrease of 7.2 p.c. from the value of such sales in 1960. Increases reported by the Atlantic Provinces, Quebec, Ontario, Alberta and British Columbia did not offset decreased sales in Manitoba and Saskatchewan. In addition to the amount spent on new machinery, \$39,643,554 was spent in 1961 for repair parts, 4.0 p.c. less than the amount so spent in 1960.

9.—Sales of Farm Implements and Equipment, by Major Group, 1957-61

(Values at wholesale prices)

Major Group	1957	1958	1959	1960	1961	Percentage Change 1960-61
	\$'000	\$'000	\$'000	\$'000	\$'000	
Tractors and engines.....	56,651	63,171	78,938	80,093	74,764	- 6.7
Ploughs.....	8,952	9,790	11,189	11,635	11,460	- 1.5
Tilling, cultivating and weeding machinery.....	7,845	9,656	11,920	12,650	12,939	+ 2.3
Planting, seeding and fertilizing machinery.....	6,703	7,104	7,894	7,873	8,224	+ 4.5
Haying machinery.....	23,566	26,257	30,655	30,544	29,298	- 4.1
Harvesting machinery.....	23,984	29,851	44,122	46,485	37,631	-19.0
Machines for preparing crops for market or for use	5,556	6,102	7,510	6,261	6,233	- 0.5
Farm wagons, wagon trucks and sleighs.....	1,527	1,900	1,994	2,025	1,910	- 5.7
Barn equipment.....	2,863	3,521	3,869	4,095	4,535	+10.7
Dairy machinery and equipment.....	5,468	6,488	5,139	5,766	5,589	- 3.1
Spraying and dusting equipment.....	1,269	1,558	1,466	1,637	1,758	+ 7.4
Miscellaneous farm equipment.....	5,518	6,616	7,535	8,401	7,436	-11.5
Totals.....	149,902	172,014	212,231	217,465	201,777	- 7.2

10.—Sales of Farm Implements and Equipment, by Province, 1960 and 1961

(Values at wholesale prices)

Province or Region	1960		1961		Percentage Change 1960-61
	Amount	P.C. of Total	Amount	P.C. of Total	
	\$		\$		
Atlantic Provinces.....	7,692,658	3.5	8,165,558	4.0	+ 6.1
Quebec.....	26,792,294	12.3	30,276,680	15.0	+13.0
Ontario.....	49,399,102	22.7	51,005,608	25.3	+ 3.3
Manitoba.....	25,876,486	12.0	18,957,752	9.4	-26.7
Saskatchewan.....	57,359,238	26.4	41,615,395	20.6	-27.4
Alberta.....	44,993,316	20.7	45,722,763	22.7	+ 1.6
British Columbia.....	5,352,089	2.4	6,032,776	3.0	+12.7
Totals.....	217,465,183	100.0	201,776,532	100.0	- 7.2

Sales Financing.—The amount of instalment financing transacted by sales finance companies in 1961 was slightly lower than in 1960 which was, in turn, lower than the high point reached in 1959; balances outstanding at the end of the year reached a peak in 1960 and decreased somewhat in 1961.

11.—Retail Instalment Paper Purchased and Balances Outstanding, by Class of Goods, 1958-61

(Millions of dollars)

Class of Goods	Paper Purchased				Balances Outstanding Dec. 31—			
	1958	1959	1960	1961	1958	1959	1960	1961
Consumer Goods	870	902	878	768	768	806	829	756
New passenger cars.....	336	371	378	330	588	610	625	569
Used passenger cars.....	333	323	298	250				
Radio and television sets.....	201	208	202	188	180	196	204	187
Household appliances.....								
Furniture.....								
Other.....								
Commercial and Industrial	265	356	366	344	257	344	393	395
New commercial vehicles.....	70	95	97	87	111	138	151	138
Used commercial vehicles.....	48	59	57	47				
Other.....	147	202	212	210	146	206	242	257
Totals	1,135	1,258	1,244	1,112	1,026	1,150	1,222	1,151

Consumer Credit.—Total balances outstanding on credit extended to consumers by retail stores and certain financial institutions are increasing very rapidly. Although the financial institutions included in the survey do not cover all sources of consumer credit, returns from the selected holders indicate that balances outstanding on credit extended to individuals for the purchase of consumer goods and services have almost doubled in the past nine years. The figures in Table 12 do not include credit extended for commercial purposes.

12.—Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals for Non-business Purposes by Certain Financial Institutions, 1953-62

(Millions of dollars)

Year	Retail Trade Credit ^a	Sales Finance Companies	Small Loans Companies	Chartered Banks	Credit Unions ^a	Life Insurance Companies Policy Loans
1953.....	682	516	176	585	129	225
1954.....	733	492	215	612	151	240
1955.....	822	599	279	788	174	250
1956.....	873	756	356	759	226	270
1957.....	901	780	362	691	258	295
1958.....	937	768	400	842	320	305 ^a
1959.....	992	806	484	1,001	397	323
1960.....	1,038	828	549	1,143	433	344
1961.....	1,088	756	594	1,366	516	358
1962 ^a	1,125	771	689	1,615	575	371

Accounts outstanding on the books of retailers stood at \$1,125,100,000 at the end of 1962. This amount excludes lumber and building material dealers and farm implement dealers, two trades included up to and including 1957, so that the results for 1958 and subsequent years more closely approximate "consumer" credit shown in Table 13.

13.—Retail Credit 1953-62, and by Kind of Business, 1962

Period	Accounts Receivable (at end of period)			Kind of Business	Accounts Receivable (at end of period)		
	Instal- ment	Charge	Total		Instal- ment	Charge	Total
	\$'000,000	\$'000,000	\$'000,000		\$'000,000	\$'000,000	\$'000,000
				1962			
1953.....	287.8	483.6	771.4	Department stores.....	17.7	86.3	426.9
1954.....	326.6	492.7	819.3	Motor vehicle.....	8.0	12.8	104.0
1955.....	381.8	542.8	924.6	Men's clothing.....	14.2	11.1	20.8
1956.....	414.9	566.6	981.5	Family clothing.....	3.6	12.4	25.3
1957.....	485.1	529.1	1,014.2	Women's clothing.....	11.0	28.0	16.0
1958 ¹	489.6	447.6	937.2	Hardware.....	167.0	27.2	194.2
1959 ¹	523.8	468.7	992.5	Furniture, appliance and radio.....	14.7	8.4	23.1
1960 ¹.....	..	..	1,037.6	Jewellery.....	2	35.5	35.5
1961 ¹.....	..	..	1,088.2	Grocery and combination (independ- ent).....	2	34.9	34.9
1962 ¹.....	..	..	1,125.1	General stores.....	3.1	53.3	56.4
				Fuel.....	2	29.4	29.4
				Garages and filling stations.....	29.5	90.1	119.6
				All other trades.....			

¹ Excludes lumber and farm implement dealers.² Included in "Charge".

Subsection 4.—Service Establishments

Service establishments as defined in the census included all those places of business where the major part of gross income (annual turnover) was derived from the rendering of services as opposed to the sale of merchandise. The following types of service were covered: amusement and recreation such as motion picture theatres and producers, and bowling alleys; personal services such as laundries and dry-cleaning plants, barber shops and shoe repair shops; certain business services such as advertising agencies and window display services; repair services such as automobile repair, radio repair and watch repair; burial services; photography, commercial and portrait; hotels and tourist camps; and other services such as cold storage locker rentals and taxis.

Summary statistics of the detailed coverage in 1951 are given in the 1955 Year Book at pp. 974-977. Annual data for certain services only are included here.

Motion Picture Theatres.—The receipts of motion picture theatres increased steadily up to 1953 when they amounted to \$108,603,966, but thereafter decreased each year to \$68,882,172 in 1961. The number of theatres in operation also decreased rapidly. The receipts of drive-ins, the most recent of theatre developments, amounted to \$6,653,262 in 1961, somewhat below the total receipts of 1960; the previous peak was in 1954.

14. —Summary Statistics of Motion Picture Theatre Operations, 1960 and 1961

Year and Item		Regular Theatres	Drive-in Theatres	Total
1960				
Establishments.....	No.	1,427	232	1,659
Receipts (excluding taxes).....	\$	65,504,666	6,789,678	72,294,344
Amusement taxes.....	\$	5,365,182	524,189	5,889,371
Paid admissions.....	No.	107,705,112	10,029,249	117,734,361
1961				
Establishments.....	No.	1,341	238	1,579
Receipts (excluding taxes).....	\$	62,228,910	6,653,262	68,882,172
Amusement taxes.....	\$	5,043,553	490,793	5,534,346
Paid admissions.....	No.	97,944,809	9,473,685	107,418,494

Motion Picture Production.—Table 15 shows the operations of private firms in the production and printing of motion picture films and film strips for industry, government, education, entertainment, etc. Films are also produced by government agencies but information concerning such production is, of course, not available. In addition, 10 firms in other business categories produced films in 1961 (four theatrical short, three films for television use, 10 other non-theatrical films of five minutes or longer, 252 newsreel stories and ciné-magazines for television, 25 for other uses, 20 commercial advertising films and 12 non-commercial advertising films for television and 25 films for unspecified uses). This production brought in revenue amounting to \$82,750.

15.—Summary Statistics of Motion Picture Production by Private Firms, 1953-61

Year	Firms	Employees	Salaries and Wages	Gross Revenue		
				Production	Printing and Laboratory	Other Revenue
	No.	No.	\$	\$	\$	\$
1953.....	32	387	1,150,890	1,592,779	1,230,493	—
1954.....	45	478	1,549,233	2,106,131	1,456,405	1,328,021
1955.....	46	445	1,460,421	2,456,038	1,051,673	512,727
1956 ¹	59	1,127	2,483,910	3,726,557	2,095,985	423,899
1957.....	58	1,216	2,758,560	4,471,710	2,978,626	469,369
1958.....	52	1,133	2,770,375	3,902,780	3,344,948	421,975
1959.....	54	1,065	3,609,537	5,814,690	3,229,240	389,480
1960.....	66	1,194	3,475,118	7,038,810	2,590,759	342,582
1961.....	67	784 ²	3,562,041	6,354,071	3,580,570	752,734

¹ Figures from 1956 include laboratories with no motion picture production; these are not included in previous years.

² As of the last week of November 1961; not comparable with previous years.

Table 16 shows types of film produced by private industry, classified by major producing region and by government agencies during 1961. Of the total of 623 films of five minutes or longer produced by private industry, one theatrical, 62 television and 30 other non-theatrical films were adaptations or language versions of original films; 55 were made for other than Canadian sponsors. Of the government films, 10 theatrical shorts, 10 television and 136 other non-theatrical films of five minutes or longer were adaptations or language versions of original films and all films were produced for Canadian sponsors.

Private industry and government agencies together printed 61,351,799 feet of 16mm. film in black and white, 8,205,054 feet of 16mm. film in colour, 22,640,272 feet of 35mm. film in black and white and 116,561 feet of 35mm. film in colour.

16.—Private Industry and Government Motion Picture Production, by Type of Film, 1961

Type	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
Entertainment, Documentary and Instructional Films—						
Five Minutes or Longer—						
Theatrical features.....	—	—	—	—	—	—
Theatrical shorts.....	1	2	1	4	19	23
Non-theatrical television.....	231	111	—	342	88	430
Other non-theatrical.....	48	163	66	277	191	468
Less than Five Minutes.....	10	59	57	126	15	141
Publicity, News and Other Films—						
Commercial advertising for television.....	217	1,728	141	2,086	—	2,086
Other commercial advertising.....	—	—	2	2	—	2
Other non-commercial advertising for television.....	—	83	3	86	—	86
Other non-commercial advertising.....	3	6	1	10	2	12
Trailers for television.....	—	11	—	11	23	34
Other trailers.....	1	—	300	301	—	301
Newsreels for television.....	10	168	—	178	109	287
Other newsclips.....	—	3	—	3	5	8

**16.—Private Industry and Government Motion Picture Production, by Type of Film,
1961—concluded**

Type	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
Publicity, News and Other Films—concluded						
Newsreel stories and ciné-magazines for television.....	202	88	55	345	72	417
Other newsreel stories and ciné-magazines.....	104	2	1	107	—	107
Slidefilms (film-strips)—						
Silent.....	1	2	2	5	53	58
Sound (with a record).....	1	13	—	14	6	20
Film titles.....	61	12	3	76	5	81
Other films.....	—	416	7	423	—	423

Power Laundries, Dry-Cleaning and Dyeing Plants.—A record of the value of work performed by power laundries and dry-cleaning and dyeing establishments during the years 1955-60 is given in Table 17, together with other basic data on operation.

**17.—Summary Statistics of Power Laundries, Dry-Cleaning and Dyeing Plants 1955-60,
and by Province 1960**

Year and Province or Territory	Plants	Em- ployees	Salaries and Wages	Cost of Materials	Value of Work Performed
POWER LAUNDRIES					
	No.	No.	\$	\$	\$
1955.....	306	13,991	28,078,112	4,994,234	54,199,647
1956.....	308	14,514	30,090,800	5,738,133	58,873,728
1957.....	320	14,557	31,869,671	5,746,805	63,106,386
1958.....	322	14,258	32,761,909	6,048,982	65,350,103
1959.....	330	13,954	33,864,341	6,653,212	68,095,503
Province, 1960					
Newfoundland and Prince Edward Island.....	6	118	204,279	51,341	512,398
Nova Scotia.....	11	355	667,140	141,140	1,317,211
New Brunswick.....	11	362	687,630	172,362	1,428,054
Quebec.....	78	4,130	10,104,088	2,090,716	20,022,718
Ontario.....	138	5,003	12,379,108	2,295,114	25,206,651
Manitoba.....	9	467	1,109,346	205,745	2,345,842
Saskatchewan.....	8	265	732,786	157,697	1,426,613
Alberta.....	23	964	2,393,504	427,130	5,055,352
British Columbia, Yukon and N.W.T.....	45	1,873	6,155,296	914,729	11,936,506
Canada, 1960.....	329	13,537	34,433,177	6,455,974	69,251,345
DRY-CLEANING AND DYEING PLANTS					
	No.	No.	\$	\$	\$
1955.....	1,205	15,909	32,873,802	7,930,290	70,733,946
1956.....	1,338	16,939	35,620,930	9,157,172	78,527,203
1957.....	1,381	16,701	38,286,440	9,710,880	84,281,509
1958.....	1,417	16,721	39,518,187	10,126,668	87,194,590
1959.....	1,483	17,233	42,343,788	10,588,480	92,211,939
Province, 1960					
Newfoundland and Prince Edward Island.....	24	268	672,423	161,623	1,375,439
Nova Scotia.....	51	632	1,277,487	342,534	2,858,217
New Brunswick.....	38	421	720,974	208,564	1,747,477
Quebec.....	295	3,372	8,733,645	2,254,089	18,801,257
Ontario.....	650	7,459	19,028,199	4,866,932	42,099,588
Manitoba.....	58	1,339	3,518,168	711,197	6,668,199
Saskatchewan.....	92	650	1,607,669	410,190	3,822,036
Alberta.....	148	1,536	3,905,394	938,053	8,550,148
British Columbia, Yukon and N.W.T.....	158	1,384	3,883,861	929,018	8,291,598
Canada, 1960.....	1,514	17,061	43,347,820	10,822,200	94,213,959

Advertising Agencies.—Table 18 records the growth of business done by advertising agencies during 1961 as compared with the four previous years.

18.—Summary Statistics of Advertising Agencies, 1957-61

Item	1957	1958	1959	1960	1961
Billings..... \$	226,083,949	237,654,038	254,145,919	272,739,802	282,430,458
Commissionable billings.....	222,025,283	233,789,805	250,030,021	267,766,156	277,633,232
Other..... \$	4,058,661	3,864,233	4,065,898	4,933,646	4,747,176
Gross revenue..... \$	35,757,762	38,073,427	41,126,958	45,150,389	46,060,680
Distribution of Billings—					
Publications..... p.c.	51.6	49.3	47.8	47.2	45.5
Production, artwork, etc..... p.c.	15.1	14.4	14.7	18.7	19.0
Radio..... p.c.	10.0	10.5	10.6	9.7	9.4
Television..... p.c.	18.3	20.5	21.3	19.3	21.4
Other visual..... p.c.	4.4	4.7	4.8	5.1	4.6
Other..... p.c.	0.6	0.6	0.8	--	0.1

Hotels.—In 1960 there were 5,294 hotels in operation in Canada, 4,416 of them full-year hotels and 878 seasonal hotels. Table 19 shows the provincial distribution of these establishments, together with the sources of their revenue.

19.—Hotels and Their Receipts, by Source 1955-60, and by Province 1960

Year and Province	Hotels	Rooms	Receipts				
			Rooms	Meals	Beer, Wine and Liquor	All Other Sources	Total
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
1955.....	5,081	147,812	96,273	72,236	211,415	35,385	415,309
1956.....	5,067	149,625	104,453	78,169	223,398	35,811	441,831
1957.....	5,151	151,517	110,505	84,049	235,210	37,305	470,069
1958.....	5,088	151,362	111,174	87,550	243,695	37,876	480,295
1959.....	5,269	154,725	117,396	95,139	264,087	40,861	517,483
Province, 1960							
Newfoundland.....	55	1,077	1,235	754	1,326	386	3,701
Prince Edward Island.....	21	628	399	323	—	58	780
Nova Scotia.....	119	3,594	3,205	2,644	420	560	6,829
New Brunswick.....	81	2,811	2,096	1,422	—	595	4,113
Quebec.....	1,683	44,260	33,210	27,222	71,824	9,880	141,636
Ontario.....	1,499	47,714	39,422	39,249	79,298	14,040	172,009
Manitoba.....	285	7,933	5,684	4,062	27,798	2,720	40,264
Saskatchewan.....	520	11,367	5,817	4,171	29,932	3,124	43,044
Alberta.....	452	14,975	12,610	7,087	32,798	5,714	58,209
British Columbia, Yukon and N.W.T.....	579	21,179	17,212	11,707	40,327	5,626	74,872
Canada, 1960.....	5,294	155,538	120,890	98,641	283,223	42,703	545,457

Section 2.—The Marketing of Agricultural Products

Subsection 1.—The Grain Trade, 1961-62

Based on the combined total of the five major Canadian grains (wheat, oats, barley, rye and flaxseed) production, marketings and domestic disappearance during the 1961-62 crop year each recorded substantial declines from their respective 1960-61 levels. Exports of the five grains in 1961-62 were almost the same as in the previous year and carryover stocks at the close of the crop year were considerably lower than those at Aug. 1, 1961.

Marketing of wheat, oats and barley continued under the compulsory crop year pools system of the Canadian Wheat Board. An initial quota of 100 units was in effect at local delivery points at the beginning of the marketing year. Permit holders were entitled to deliver a maximum of 300 bu. of wheat or 1,000 bu. of oats or 500 bu. of barley or 500 bu. of rye or any combination of these grains which, when calculated on the unit basis, did not exceed 100 units

Deliveries of Durum wheat were placed on a number of special open quotas between the beginning of the crop year and Mar. 15, 1962, at which date the open delivery quota was extended for the remainder of the crop year. Flaxseed was on an open delivery quota during the entire crop year. A number of supplementary delivery quotas were established on soft white spring wheat, oats, barley and rye. An open quota basis was issued for delivery of rye as at Nov. 22, 1961 and for soft white spring wheat at Jan. 23, 1962.

The initial unit quota which prevailed at the beginning of the crop year was followed by general quotas based on bushels per specified acreage. Specified acreage consisted of each permit holder's acreage seeded to wheat (including Durum), oats, barley and rye as well as summer fallow and eligible acreage seeded to cultivated grasses and forage crops. Reflecting the relatively large export clearances during the early months of the crop year, grain shipments out of the Prairie Provinces were comparatively heavy. At the same time marketings declined because of the small crop in 1961. As a result, the Wheat Board was able to advance delivery quotas at a rapid pace. On Jan. 3, 1962, a total of 310 delivery points were placed on an open quota, marking the first time since 1950-51 that stations in the Western Division were on this basis. By Apr. 12, 1962, the Canadian Wheat Board had authorized open delivery quotas at all stations for the remainder of the crop year.

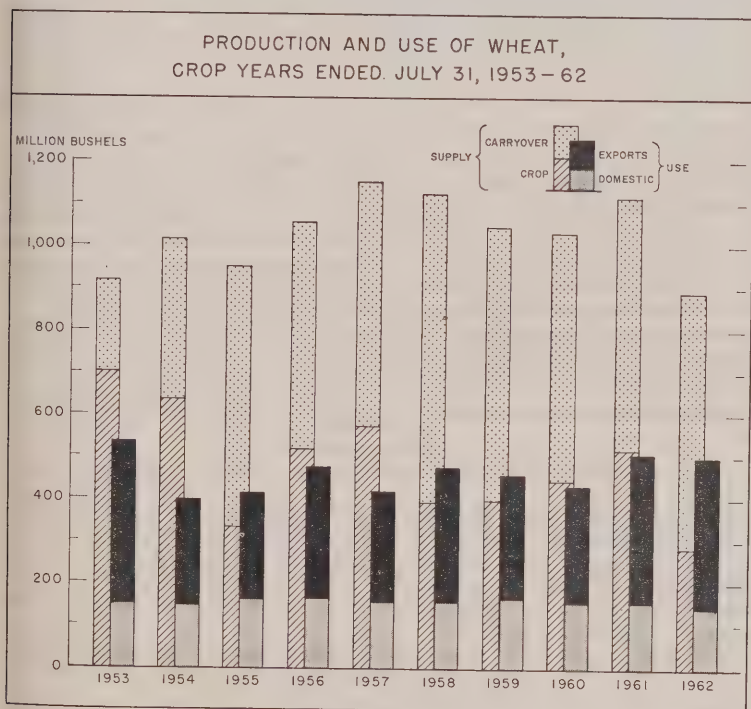
20.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1961 and 1962

(Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed
Crop Year 1960-61					
Carryover, Aug. 1, 1960.....	599.6	100.8	128.5	6.8	4.8
Production in 1960.....	518.4	398.5	193.5	10.2	22.5
Imports ¹	2	2	2	2	2
Totals, Supply.....	1,118.0	499.3	321.9	17.0	27.3
Exports ²	353.2	2.7	47.2	2.6	13.6
Domestic use ³	156.9	381.5	162.2	7.0	6.1
Totals, Disposition.....	510.1	384.2	209.4	9.6	19.7
Crop Year 1961-62					
Carryover, Aug. 1, 1961.....	607.8	115.2	112.6	7.4	7.6
Production in 1961.....	283.4	284.0	112.6	6.5	14.3
Imports ¹	2	5.5	2	2	2
Totals, Supply.....	891.2	404.6	225.2	14.0	21.9
Exports ²	358.0	3.5	42.9	4.4	12.0
Domestic use ³	142.2	322.1	124.5	5.8	4.6
Totals, Disposition.....	500.2	325.5	167.4	10.2	16.6
Carryover, July 31, 1962.....	391.1	79.1	57.8	3.8	5.3

¹ Includes flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour in terms of rye. ² Fewer than 50,000 bu. ³ Includes bagged seed wheat flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour in terms of rye. ⁴ Includes human food, seed requirements, industrial use, loss handling and animal feed.

Wheat.—Supply and Disposition.—With a substantial decline in production more than offsetting larger opening stocks, total supplies of wheat in the 1961-62 crop year were below the 1,000,000,000-bu. level for the first time since 1954-55 and the lowest since the crop year 1951-52. Total supplies of wheat, consisting of the Aug. 1 carryover of 607,800,000 bu. and the 1961 crop of 283,400,000 bu., amounted to 891,200,000 bu., 20 p.c. less than the 1960-61 total of 1,118,000,000 bu. and 23 p.c. below the record 1956-57 supplies of 1,152,800,000 bu. Exports of wheat and flour in terms of wheat, at 358,000,000 bu., were 1 p.c. above the 353,200,000 bu. exported in the preceding year and were the third highest on record. Domestic disappearance of wheat declined to 142,200,000 bu., the lowest level since the crop year 1949-50 and 9 p.c. less than in 1960-61; a reduction in wheat used for feed more than offset heavier requirements for food and seed. With total disappearance amounting to 500,200,000 bu. and production at 283,400,000 bu., carryover stocks at July 31 registered a 52-p.c. decline from 607,800,000 bu. in 1961 to 391,100,000 bu. in 1962.



Price and Marketing Arrangements.—Marketing of western Canadian wheat during the crop year 1961-62 was again conducted by the Canadian Wheat Board on a one-year pool basis, the initial payment commencing at \$1.40 per bu., basis No. 1 Northern in store Fort William-Port Arthur or Vancouver. However, on Aug. 24, 1961, the Wheat Board announced that initial payments for all grades of wheat would remain at the same levels as during the previous crop year except for all grades of Canada Western Amber Durums.

Initial payments for these grades were increased by 35 cents per bu. to assist in meeting an abnormal supply position and to encourage producers to deliver these grades at the earliest possible date. Effective Mar. 1, 1962, the initial payment prices for wheat were increased by 75 cents per bu. for Durums (in addition to the 35-cent increase announced Aug. 24) and 10 cents per bu. for all other grades of wheat. An adjustment payment was made to producers at these rates for deliveries during the period Aug. 1, 1961 to Feb. 28, 1962.

An interim payment on the 1961-62 wheat pool account pertaining to Durum grades was announced on Dec. 6, 1962, and this payment was, at the same time, a final payment on 1961-62 deliveries. Although the Canadian Wheat Board Act does not make provision for separate final payments for Durum and other spring wheat, it does provide for interim payments when they can be made without a loss. Producers delivered 10,500,000 bu. of Durum wheat to the 1961-62 pool and all of it was sold. After deduction of the 1-p.c. Prairie Farm Assistance Act levy, the interim payment amounted to \$6,900,000, or an average of 65.9 cents per bu. The final payment on the 1961-62 pool account for wheat, announced Mar. 22, 1963, was about \$123,900,000, which, after deduction of the PFAA levy, amounted to a record 42.974 cents per bu. The total final payment for No. 1 Northern basis in store Fort William-Port Arthur or Vancouver, before deducting the PFAA levy, was \$1.91021 per bu.

The crop year 1961-62 coincided with the third year of the fourth three-year International Wheat Agreement. Sales under the Agreement were widely distributed; 28 of the 36 importing countries included in the pact purchased wheat and/or flour from Canada. Such purchases amounted to the equivalent of 232,100,000 bu. and accounted for 37 p.c. of total sales under the Agreement. The leading IWA market for Canadian wheat and flour was Britain, shipments to that country amounting to some 86,000,000 bu. Other major importers were: Japan, 49,100,000 bu.; the Federal Republic of Germany, 43,900,000 bu.; Belgium and Luxembourg, 11,700,000 bu.; East Germany, 8,000,000 bu.; Switzerland, 8,000,000 bu.; the Philippines, 4,900,000 bu.; and Venezuela, 4,700,000 bu. The leading markets for Class II wheat were: Mainland China, 72,000,000 bu.; Poland, 12,300,000 bu.; Italy, 3,900,000 bu.; the United States, 2,900,000 bu.; and Finland, 2,500,000 bu.

During 1961-62, domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the International Wheat Agreement. Class II prices for all grades of wheat coincided with the IWA and domestic quotations.

21.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1957-62

(Millions of bushels)

Item	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62
Carryover, Aug. 1.....	579.6	733.5	648.5	588.0	599.6	607.8
Production.....	573.0	392.7	398.1	445.1	518.4	283.4
Imports ¹	0.1	2	2	2	2	2
Totals, Supply.....	1,152.8	1,126.3	1,046.5	1,033.1	1,118.0	891.2
Exports ¹	264.4	320.3	294.5	277.3	353.2	358.0
Domestic use.....	154.8	157.5	164.0	156.2	156.9	142.2
Totals, Disposition.....	419.2	477.8	458.5	433.5	510.1	500.2
Carryover, July 31.....	733.5	648.5	588.0	599.6	607.8	391.1

¹ Includes bagged seed wheat and wheat flour in terms of wheat.

² Fewer than 50,000 bu.

Other Grains.—Supply and Disposition.—The supply and disposition of the major Canadian grains for the crop years 1960-61 and 1961-62 is shown in Table 20.

Price and Marketing Arrangements.—Marketings of Western Canadian oats and barley were again carried on through compulsory crop year pools, administered by the Canadian Wheat Board. The initial payment for oats in the 1961-62 crop year, basis No. 2 C.W. in store Fort William—Port Arthur, was 60 cents per bu., the same as in 1960-61. The initial payment for barley, basis No. 3 C.W. Six-Row in store Fort William—Port Arthur, at 96 cents per bu., was also unchanged from 1960-61. No interim payments were made on either grain during the crop year. Final payment on the 1961-62 oat pool was announced Nov. 26, 1962. The final surplus for distribution was some \$4,300,000 and, based on 24,900,000 bu. delivered to the 1961-62 pool, averaged 17.26659 cents per bu. before deducting the PFAA levy. The final payment on the 1961-62 barley pool, based on deliveries of 56,400,000 bu. and a final payment to producers of about \$17,000,000, averaged 30.2 cents per bu. before deduction of the PFAA levy. Total prices, basis in store Fort William—Port Arthur, realized by producers for representative grades prior to the PFAA levy were as follows: No. 2 C.W. oats, \$0.77196 per bu.; No. 1 Feed oats, \$0.69542 per bu.; No. 3 C.W. Six-Row barley, \$1.28045 per bu.; and No. 1 Feed barley, \$1.16170 per bu. Some 3,400,000 bu. of rye and 12,000,000 bu. of flaxseed were delivered by farmers in Western Canada in 1961-62.

Combined exports of oats, barley, rye and flaxseed (including exports of oatmeal and rolled oats, malt and pot and pearl barley in terms of grain equivalent) amounted to 62,700,000 bu. during the crop year 1961-62, about 5 p.c. less than the comparable 1960-61 level of 66,100,000 bu. and sharply below the ten-year (1950-51—1959-60) average of 126,800,000 bu. Exports of oats and rye were larger than in the previous season and shipments of barley and flaxseed were lower.

Clearances of Canadian oats in 1961-62 amounted to 2,700,000 bu. and represented one of the lowest shipments of this grain on record. Britain and the United States, with imports of 1,600,000 bu. and 1,000,000 bu., respectively, absorbed the bulk of the exports. Exports of bagged seed oats amounted to 300,000 bu. and of oatmeal and rolled oats, in terms of grain equivalent, to 500,000 bu., amounts relatively unchanged from the previous year. Barley exports of 36,700,000 bu. represented a decline of 12 p.c. from the 1960-61 level of 41,500,000 bu.; Mainland China purchased 19,300,000 bu., more than half the 1961-62 total, and most of the remainder was accounted for by exports of 9,700,000 bu. to the United States and 7,400,000 bu. to Britain. Shipments to these three countries during the preceding crop year were 20,400,000 bu., 12,000,000 bu. and 8,700,000 bu., respectively. In addition, exports of malt were the equivalent of 6,300,000 bu. of barley compared with 5,600,000 bu. in 1960-61.

Exports of Canadian rye during 1961-62, at 4,400,000 bu., showed considerable improvement over the previous year's total of 2,600,000 bu.; the major customer was the Federal Republic of Germany, which purchased 3,600,000 bu. Canadian flaxseed moving overseas during 1961-62 amounted to 12,000,000 bu. compared with 13,600,000 bu. in the previous year; Britain imported 4,600,000 bu. and Japan 3,100,000 bu. Exports of linseed oil were equivalent to about 500,000 bu. of flaxseed and most of it went to Britain.

Trade in rapeseed amounted to 6,900,000 bu. against 8,100,000 bu. in the preceding year, the leading markets being Italy, Japan and the Netherlands. Mustard seed exports, at 500,000 bu., were somewhat reduced from the 1960-61 level of 800,000 bu.; the major markets in the latest year were the United States, Japan and Belgium and Luxembourg.

Miscellaneous Grain Trade Statistics.—*Grain Handled at Eastern Elevators.*—Total receipts of the five major grains at eastern elevators in the 1961-62 crop year amounted to 93,100,000 bu., 18 p.c. less than in 1960-61. Shipments totalled 312,100,000 bu., 13 p.c. less than in 1960-61. Receipts and shipments of rye and flaxseed increased but handlings of each of the other three grains declined.

22.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1958-62

NOTE.—Figures for the crop years ended 1922-57 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.
Receipts—						
1957-58.....	302,934,930	47,087,691	80,972,437	2,807,022	17,419,477	451,221,557
1958-59.....	287,235,822	40,935,632	55,087,986	2,468,424	14,779,910	400,507,774
1959-60.....	273,525,714	32,442,882	26,293,125	1,345,336	6,989,980	350,597,037
1960-61.....	283,713,889	32,686,125	34,139,873	1,305,521	6,010,008	357,855,416
1961-62.....	243,025,206	18,252,519	21,412,213	3,202,174	7,197,612	293,089,724
Shipments—						
1957-58.....	307,832,795	46,940,137	81,268,949	2,914,724	17,473,880	456,430,485
1958-59.....	294,412,290	42,689,493	59,544,772	2,551,111	14,635,190	410,832,856
1959-60.....	254,448,048	33,411,003	37,260,454	1,413,050	7,182,791	333,715,346
1960-61.....	287,810,455	30,785,810	31,288,234	1,200,616	6,086,236	337,171,351
1961-62.....	258,787,935	19,494,745	23,530,370	3,227,310	7,098,689	312,139,049

Grain Inspections.—The volume of Canadian wheat, oats, barley, rye, flaxseed, corn, buckwheat and mixed grain inspected by the Board of Grain Commissioners for Canada in the crop year 1961-62 amounted to 531,900,000 bu., 9 p.c. below the 1960-61 total of 586,100,000 bu.

23.—Quantities of Grain and Other Field Crops Inspected, Crop Years Ended July 31, 1961 and 1962

Crop	1960-61			1961-62		
	Western Division	Eastern Division	Total	Western Division	Eastern Division	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	411,509,920	5,261,226	416,771,146	405,957,236	9,280,768	415,238,004
Spring wheat.....	411,509,920	—	411,509,920	405,957,236	86,755	406,043,991
Winter wheat.....	—	5,261,226	5,261,226	—	9,194,013	9,194,013
Oats.....	40,178,768	640,579	40,819,347	23,040,336	132,200	23,172,536
Barley.....	100,815,644	128,200	100,943,844	72,449,452	184,555	72,634,007
Rye.....	5,751,846	650	5,752,496	4,519,424	35,700	4,555,124
Flaxseed.....	20,517,695	—	20,517,695	13,615,098	8,300	13,623,398
Corn.....	171,325	787,270	958,595	235,752	2,136,049	2,371,801
Buckwheat.....	60,916	60,174	121,090	2,203	60,449	62,652
Mixed grain ¹	247,675	—	247,675	234,384	—	234,384
Soybeans.....	—	3,012,753	3,012,753	—	6,766,585	6,766,585
Beans.....	—	384,576	384,576	—	643,546	643,546
Peas.....	96,128	—	96,128	15,020	—	15,020
Sample grain ¹	179,287	—	179,287	224,213	—	224,213
Rapeseed ¹	13,535,520	—	13,535,520	10,533,106	—	10,533,106
Mustard seed ¹	1,083,372	—	1,083,372	416,944	—	416,944
Safflower seed ²	50,446	—	50,446	3,976	—	3,976
Western Grain Inspected in the Eastern Division—						
Barley.....	...	405,457	405,457	...	386,575	386,575
Flaxseed.....	...	763,565	763,565	...	561,180	561,180
Buckwheat.....	—	—	—	...	7,053	7,053
Peas.....	...	67,758	67,758	...	68,654	68,654
Rapeseed ¹.....	...	212,957	212,957	...	—	—

¹ Western grain in bushels of 50 lb.

² In bushels of 45 lb.

Lake Shipments of Grain.—The 1962 navigation season opened on Apr. 22 and closed on Dec. 13. During that period, total vessel shipments of wheat, oats, barley, rye, flaxseed and buckwheat amounted to 249,700,000 bu., 23 p.c. less than the 326,100,000 bu. shipped during the 1961 navigation season which opened on Apr. 9 and closed on Dec. 16.

**24.—Lake Shipments of Canadian Grain from Fort William-Port Arthur,
Season of Navigation 1961 and 1962**

Grain	1961				1962			
	To Canadian Ports	To U.S. Ports	To Overseas Direct	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Direct	Total Shipments
Wheat.....bu.	230,180,141	2,573,190	11,023,801	243,777,132	173,991,505	1,842,045	7,081,614	182,915,164
Oats....."	23,762,895	—	20,753	23,783,648	21,398,044	158,868	1,366,129	22,923,041
Barley....."	32,836,359	11,951,060	1,467,350	46,254,769	23,627,148	3,469,039	2,638,544	29,734,731
Rye....."	2,666,658	1,038,769	578,275	4,283,702	2,306,651	1,104,708	2,711,190	6,122,549
Flaxseed....."	6,423,193	—	1,579,272	8,002,465	6,607,024	—	1,357,733	7,964,757
Buckwheat....."	—	—	—	—	31,860	—	—	31,860
Totals....bu.	295,869,246	15,563,019	14,669,451	326,101,716	227,962,232	6,574,660	15,155,210	249,692,102
Sample grain...lb.	18,564,788	—	—	18,564,788	18,253,250	—	—	18,253,250
Screenings.....tons	48,167	32,796	15,813	96,776	40,339	—	20,064	60,403

Wheat Flour.—Production of wheat flour in the crop year 1961-62 amounted to 39,500,000 cwt., about 1 p.c. lower than in the previous crop year. Similarly, wheat milled for flour at 88,200,000 bu. was slightly less than during 1960-61. Of the wheat milled for flour, about 79,000,000 bu. were Western Canadian spring wheat (other than Durum), the remainder consisting of Ontario winter wheat to the amount of 6,600,000 bu., Durum 1,800,000 bu., and "other" 896,000 bu. Based on a daily operating potential of some 166,400 cwt., utilization of milling capacity averaged 81.5 p.c. in 1961-62 compared with 82.6 p.c. in the preceding year.

Exports of wheat flour during the 1961-62 crop year amounted to 13,893,000 cwt., 10 p.c. lower than the quantity exported during the previous crop year.

**25.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year
Averages 1936-55 and Crop Years Ended July 31, 1956-62**

Crop Year (Aug. 1—July 31)	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1935-36 — 1939-40.....	67,845	29,405,451	9,603,941	32.7
Av. 1940-41 — 1944-45.....	99,705	43,908,245	23,699,546	54.0
Av. 1945-46 — 1949-50.....	107,330	47,011,540	25,819,721	54.9
Av. 1950-51 — 1954-55.....	100,446	43,847,894	21,812,041	49.7
1955-56.....	91,770	40,148,750	17,391,300	43.3
1956-57.....	85,149	37,623,446	14,582,431	38.8
1957-58.....	92,289	40,819,678	17,556,886	43.0
1958-59.....	90,143	39,826,493	16,141,267	40.5
1959-60.....	91,390	40,344,578	16,073,893	39.8
1960-61.....	89,731	39,914,644	15,513,836	38.9
1961-62.....	88,241	39,539,651	13,892,676	35.1

Subsection 2.—Livestock Marketings*

Marketings of cattle and sheep and lambs in 1962 were lower than in 1961 while marketings of hogs and calves were higher. Cattle marketed through stockyards and shipped directly to packing plants numbered 2,493,814, down 1.5 p.c. from the previous year, and the proportion of steers and heifers graded choice and good was lower. The number of cattle moving from stockyards and plants to feedlots was also down about 5 p.c. compared

* More detailed information is available from DBS annual report *Livestock and Animal Products Statistics* Catalogue No. 23-203), and the Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry are given on pp. 454-458 of this edition of the Year Book.

with 1961. On the other hand, calves marketed at stockyards and packing plants increased in number by 7.1 p.c. and the number of hog carcasses graded at approved and inspected plants increased by 2.2 p.c. The proportion of Grade A hogs was 34.9 p.c. of the total, slightly higher than in 1961. Marketings of sheep and lambs decreased 5.2 p.c.

26.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1958-62

(Exclusive of Newfoundland)

Livestock	1958	1959	1960	1961	1962
	No.	No.	No.	No.	No.
Cattle	2,450,306	2,161,628	2,322,626	2,532,248	2,493,814
Steers—					
Choice.....	337,022	327,721	431,697	511,744	476,883
Good.....	273,090	228,790	238,920	271,077	231,158
Medium.....	154,613	150,547	172,080	163,484	160,971
Common.....	49,233	52,852	51,648	55,603	56,404
Heifers—					
Choice.....	63,752	62,043	100,818	116,670	101,667
Good.....	113,221	98,354	106,436	104,101	105,913
Medium.....	128,056	111,766	116,918	106,642	112,796
Common.....	64,194	64,585	57,737	57,596	56,673
Fed calves.....	130,080	100,020	97,250	85,845	82,442
Cows.....	645,889	534,581	548,412	566,045	642,781
Bulls.....	82,583	66,276	71,079	74,045	69,515
Feeder steers.....	330,665	286,144	267,209	323,932	307,883
Stock and feeder cows and heifers.....	77,898	77,949	62,422	95,464	88,728
Calves	1,015,355	881,963	864,928	918,990	984,237
Veal—					
Good and choice.....	213,007	157,992	158,069	173,071	211,444
Common and medium.....	510,561	460,184	484,632	423,613	431,041
Grass.....	61,883	56,606	60,674	51,196	48,676
Stocker.....	229,904	207,181	161,553	271,110	293,078
Hog Carcasses	6,458,848	8,568,217	6,764,196	6,448,956	6,593,945
"A".....	1,852,098	2,530,973	2,064,623	2,105,855	2,299,956
"B".....	3,258,296	4,138,572	3,141,647	2,917,488	2,947,274
"C".....	630,593	873,791	724,189	613,412	543,769
"D".....	28,542	69,696	46,726	39,306	47,597
Heavy.....	150,353	184,586	222,683	212,903	216,085
Extra heavy.....	116,439	111,176	78,579	77,960	77,472
Light.....	84,233	198,478	198,771	152,966	168,171
Sows.....	283,237	388,861	231,753	278,563	240,253
Injured, ridglings and stags.....	55,057	72,084	55,225	50,503	53,368
Lambs and Sheep Graded Alive	483,186	480,314	479,985	442,299	72,744
Lamb and Sheep Carcasses	76,183	82,115	72,233	161,115	499,279¹

¹ Lamb carcasses.

27.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1961 and 1962

(Exclusive of Newfoundland)

Year and Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1961								
Cattle	36,944	108,967	751,054	291,268	583,192	882,344	69,874	2,723,643
Totals to stockyards.....	3,120	60,471	389,512	184,168	383,597	470,979	8,987	1,500,834
Direct to packers.....	32,101	46,080	323,587	104,837	139,599	350,582	34,628	1,031,415
Direct for export.....	1,083	2,416	37,955	1,633	41,609	49,483	18,623	152,802
Country points in other provinces ¹	640	—	—	630	18,387	11,800	7,636	38,593
Calves	20,772	269,895	215,927	110,889	199,123	222,149	11,224	1,049,975
Totals to stockyards.....	6,976	87,304	96,510	72,440	140,013	121,269	1,874	526,386
Direct to packers.....	11,451	175,838	101,952	33,148	13,911	51,294	5,010	392,600
Direct for export.....	310	6,753	17,465	5,008	8,713	1,715	1,027	40,990
Country points in other provinces ¹	2,035	—	—	293	36,486	47,871	3,313	89,998

¹ Livestock billed through stockyards to country points outside province of origin.

**27.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export,
by Province, 1961 and 1962—concluded**

Year and Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Total
1961—concl.	No.	No.	No.	No.	No.	No.	No.	No.
Hogs	175,933	1,163,433	2,333,259	519,270	585,784	1,639,909	33,335	6,470,923
Totals to stockyards.....	—	68,183	242,726	89,976	68,030	146,355	844	616,114
Direct to packers.....	175,415	1,095,250	2,070,386	429,291	517,743	1,512,339	32,418	5,832,842
Direct for export.....	518	—	20,147	3	11	1,215	73	21,967
Sheep and Lambs	38,914	85,634	145,718	41,745	67,398	222,324	30,048	631,781
Totals to stockyards.....	2,641	9,450	63,647	13,862	22,614	47,781	675	160,670
Direct to packers.....	36,064	76,182	81,233	26,632	33,719	159,832	29,082	442,744
Direct for export.....	209	2	838	24	7	172	92	1,344
Country points in other provinces ¹	—	—	—	1,227	11,058	14,539	199	27,023
Total Inward Move- ment—²								
Cattle.....	527	4,789	152,088	26,338	64,022	147,470	1,603	396,837
Calves.....	159	1,064	161,743	4,934	13,303	54,315	1,064	236,602
Sheep and lambs.....	7	1,824	31,165	2,269	1,501	7,912	398	45,076
1962								
Cattle	46,765	122,260	845,168	220,073	507,887	875,932	86,446	2,704,531
Totals to stockyards.....	4,390	70,998	440,177	137,496	312,915	487,960	10,498	1,464,434
Direct to packers.....	40,428	49,587	364,083	80,548	126,029	330,208	38,497	1,029,380
Direct for export.....	1,373	1,675	40,873	1,844	57,822	51,810	27,300	182,697
Country points in other provinces ¹	574	—	35	185	11,121	5,954	10,151	28,020
Calves	22,879	312,834	236,819	93,182	214,450	238,888	18,414	1,137,466
Totals to stockyards.....	5,653	88,708	98,081	65,649	141,366	140,943	4,116	544,516
Direct to packers.....	13,885	211,542	121,109	25,342	13,393	48,166	6,284	439,721
Direct for export.....	201	12,584	17,588	1,982	19,734	2,183	681	54,953
Country points in other provinces ¹	3,140	—	41	209	39,957	47,596	7,333	98,276
Hogs	172,292	1,336,739	2,402,217	467,086	512,908	1,674,672	32,050	6,597,964
Totals to stockyards.....	—	74,331	319,556	75,276	68,233	151,146	28	678,570
Direct to packers.....	171,614	1,262,407	2,079,878	391,804	454,622	1,523,031	32,019	5,915,375
Direct for export.....	678	1	2,783	6	53	495	3	4,019
Sheep and Lambs	38,664	70,770	157,070	35,815	69,058	205,401	31,271	608,049
Totals to stockyards.....	962	5,920	67,812	13,443	21,513	37,228	698	147,576
Direct to packers.....	37,684	64,836	88,483	22,322	36,280	144,451	30,391	424,447
Direct for export.....	18	14	775	—	1,061	16,662	72	18,602
Country points in other provinces ¹	—	—	—	50	10,204	7,060	110	17,424
Total Inward Move- ment—²								
Cattle.....	180	1,931	112,247	29,765	56,306	172,231	2,959	375,619
Calves.....	89	938	187,963	5,306	14,421	62,750	1,035	252,502
Sheep and lambs.....	—	584	17,316	2,457	1,483	8,169	733	30,722

¹ Livestock billed through stockyards to country points outside province of origin.

² Movement to farms from stockyards and plants on through-billings from country points in one province to country points in another province.

Section 3.—Warehousing and Cold Storage*

The presentation of warehousing statistics is difficult because it is not an easy matter to define clearly what are to be regarded as stocks in storage. However, if the strict economic definition of warehousing is adopted, then this term should be restricted to those facilities that add the utility of 'time' to the 'form' utilities that are the product of the extraction and manufacturing industries. Because the warehouses established in close connection with retail trade are more often than not convenient places for the temporary storage of goods in process of transfer from the manufacturer or wholesaler to the consumer, they are not, in the strict economic sense, services that add the utility of 'time' to commodities already worked up into 'form'. Separate statistics of the latter branch of storage are not available.

* Information supplied by various Divisions of the Departments of Agriculture, Fisheries, Mines and Technical Surveys, and National Revenue and of the Dominion Bureau of Statistics.

The statistics of warehousing are gathered together under this Section. Subsection 1 presents statistics of the licensed storage of grain. Subsection 2 deals with cold storage facilities without which perishable foods such as meats, dairy products, fish and fruits could not be exchanged or distributed on a wide scale; it includes also figures of stocks of food on hand. Subsection 3 deals with the storage of petroleum and its products, and Subsection 4 with public warehouses and customs warehouses. The facilities that specialize in the storage of tobacco and alcoholic liquors are analysed in Subsection 5. These bonded warehouses, as they are called, are under the strict surveillance of Federal Government excise officers, who supervise all movements into and from such places of storage.

Subsection 1.—Licensed Grain Storage

Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 652,112,000 bu. at Dec. 1, 1961 and represented an increase of 7,156,000 bu. over capacity at Dec. 1, 1960. Although the capacity of western country elevators declined by 575,000 bu., capacity at the Lakehead was expanded by 6,800,000 bu. and relatively small increases were recorded at interior, private and mill elevators and at lower Lake and St. Lawrence ports.

The system was generally congested at the beginning of 1961-62 but this congestion was relieved, especially during the latter months of the crop year, as a result of heavy export shipments and the prairie drought which caused farmers to hold back grain that might otherwise have been delivered before the end of the crop year. As indicated in Table 28, only 56.3 p.c. of the licensed storage capacity was occupied at July 31, 1962 as compared with 74.9 p.c. a year earlier.

28.—Licensed Grain Storage Capacity and Grain in Store, Crop Years
1960-61 and 1961-62

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain in Licensed Storage			Proportion of Licensed Storage Capacity Occupied		
	Dec. 1, 1960	Nov. 30, 1960	Mar. 29, 1961	July 31, 1961	Nov. 30, 1960	Mar. 29, 1961	July 31, 1961
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
1960-61							
Western country.....	374,033	303,124	304,312	288,648	81.0	81.4	77.2
Interior, private and mill.....	20,514	10,218	9,732	10,423	49.8	47.4	50.8
Interior, terminals.....	18,100	12,756	11,741	11,751	70.5	64.9	64.9
Pacific coast.....	24,906	12,222	15,546	13,553	49.1	62.4	54.4
Churchill.....	5,000	4,837	4,837	4,224	96.7	96.7	84.5
Fort William-Port Arthur.....	91,967	60,685	84,742	74,281	66.0	92.1	80.8
Georgian Bay and upper Lake ports..	36,566	32,903	11,272	30,938	90.0	30.8	84.6
Lower Lake and upper St. Lawrence ports.....	21,460	16,264	9,468	14,384	75.8	44.1	67.0
Lower St. Lawrence ports.....	45,180	34,154	20,043	30,261	75.6	44.4	67.0
Maritime ports (excl. Newfoundland).	7,229	6,101	3,199	4,433	84.4	44.3	61.3
Totals, 1960-61.....	644,956	493,265	474,894	482,896	76.5	73.6	74.9
	Dec. 1, 1961	Nov. 29, 1961	Mar. 28, 1962	July 31, 1962	Nov. 29, 1961	Mar. 28, 1962	July 31, 1962
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.
1961-62							
Western country.....	373,458	250,771	193,420	194,611	67.1	51.8	52.1
Interior, private and mill.....	20,926	10,608	10,471	9,065	50.7	50.0	43.3
Interior, terminals.....	18,100	13,538	12,680	9,093	74.8	70.1	50.2
Pacific coast.....	24,906	14,058	11,365	13,614	56.4	45.6	54.7
Churchill.....	5,000	4,829	4,829	4,400	96.6	96.6	88.0
Fort William-Port Arthur.....	98,767	53,258	80,935	75,509	54.0	81.9	76.5
Georgian Bay and upper Lake ports..	36,566	27,819	23,342	19,764	76.1	63.8	54.1
Lower Lake and upper St. Lawrence ports.....	21,480	11,032	9,952	10,816	51.4	46.3	50.4
Lower St. Lawrence ports.....	45,680	33,386	21,080	26,803	73.1	46.1	58.7
Maritime ports (excl. Newfoundland).	7,229	6,497	2,536	3,534	89.9	35.1	48.9
Totals, 1961-62.....	652,112	425,795	370,608	367,208	65.3	56.8	56.3

Subsection 2.—Cold Storage and Storage of Foods

Cold Storage Warehouses.—Under the Cold Storage Act (RSC 1952, c. 52), as amended (RSC 1952, c. 313), subsidies are granted by the Federal Government to encourage the construction and equipment of cold storage warehouses open to the public. The Act is administered by the Department of Agriculture.

There are five classifications of cold storage warehouses in Canada: (1) public warehouses that store foods and food products and where the entire space is open to the public; (2) semi-public, or those that store foods and where part of the space is retained for the products of the owner and the remainder is available to the public; (3) private, or those that store foods and food products and allot no space to the public, a classification that includes refrigerated space in connection with abattoirs, creameries, dairies, cheese factories and wholesale and retail distributing warehouses; (4) locker plant, where the total space is occupied by lockers for rental to the public and where food and food products may be cut, processed, chilled and frozen for storage in lockers; and (5) bait depots, where space is used solely or principally for the freezing and storing of bait for the use of fishermen.

No hard and fast rule can be laid down for distinguishing between public and private warehouses. In general, those owned and operated by firms trading in the goods stored in the warehouse are considered as private, although most of these places rent space to the public when it is not required for their own purposes.

The figures in Tables 29 and 30, compiled by the Department of Agriculture, give some idea of the cold storage warehouse capacity in Canada, but it must be explained that it is not possible to secure completely accurate information on this subject and that the figures are approximations only.

29.—Cold Storage Warehouses, by Province, Year Ended Mar. 31, 1963

NOTE.—Figures are approximations only.

Province	Subsidized Public Warehouses				All Warehouses	
	No.	Refrigerated Space	Approved Cost	Approved Subsidy	No.	Refrigerated Space
		cu. ft.	\$	\$		cu. ft.
Newfoundland.....	2	44,078	201,960	67,320	71	2,481,809
Prince Edward Island.....	12	358,037	351,409	110,300	24	599,204
Nova Scotia.....	27	5,430,089	4,544,841	1,372,014	194	7,445,051
New Brunswick.....	16	2,173,499	2,347,527	748,178	96	3,271,083
Quebec.....	64	6,716,355	6,551,002	2,093,678	399	26,712,504
Ontario.....	95	14,863,239	12,678,799	3,993,738	970	43,856,128
Manitoba.....	13	3,403,721	2,443,996	737,443	298	11,664,914
Saskatchewan.....	24	1,243,886	1,912,526	612,939	326	5,690,044
Alberta.....	9	1,447,845	2,153,657	701,608	307	8,548,136
British Columbia.....	80	24,771,702	10,766,212	3,267,407	415	36,770,938
Totals.....	342	60,452,451	43,951,929	13,704,625	3,100	147,039,811

30.—Cold Storage Warehouses and Refrigerated Space, by Province and Type, as at Mar. 31, 1963

NOTE.—Figures are subject to revision.

Province	Public and Semi-public		Private		Bait Depots		Locker Plants		All Warehouses	
	No.	Space	No.	Space	No.	Space	No.	Space	No.	Space
		cu. ft.		cu. ft.		cu. ft.		cu. ft.		cu. ft.
Newfoundland.....	3	262,980	41	1,792,109	27	426,720	—	—	71	2,481,809
Prince Edward Island..	13	340,337	10	257,902	1	965	—	—	24	599,204
Nova Scotia.....	36	5,173,407	140	2,214,547	17	50,937	1	6,160	194	7,445,051
New Brunswick.....	25	2,549,328	71	721,755	—	—	—	—	96	3,271,083
Quebec.....	151	17,367,136	237	9,296,614	—	—	11	48,754	399	26,712,504
Ontario.....	227	26,856,501	535	15,205,363	—	—	208	1,794,264	970	43,856,128
Manitoba.....	17	5,402,662	194	5,475,704	—	—	87	786,548	298	11,664,914
Saskatchewan.....	14	1,333,565	113	2,819,968	—	—	199	1,536,511	326	5,690,044
Alberta.....	19	1,777,141	165	5,800,056	—	—	123	970,939	307	8,548,136
British Columbia.....	89	27,467,668	232	8,197,353	—	—	94	1,105,917	415	36,770,938
Totals.....	594	88,530,725	1,738	51,781,371	45	478,622	723	6,249,093	3,100	147,039,811

31.—Stocks of Food Commodities in Dairy Factories and Cold Storage Warehouses, as at Jan. 1, 1961 and 1962

Year and Item	As at Jan. 1	Minimum during Year	Date at which Minimum Occurred	Maximum during Year	Date at which Maximum Occurred	Twelve-Month Average
1961						
Butter, creamery, dairy and whey ¹	'000 lb. 113,977	83,302	Apr. 1	158,506	Oct. 1	120,706
Cheese, cheddar ¹	" 55,766	43,080	Apr. 1	71,802	Oct. 1	56,795
Evaporated whole milk.....	" 43,549	24,078	Apr. 1	81,070	Oct. 1	52,492
Skim milk powder.....	" 23,204	20,440	Mar. 1	53,703	Nov. 1	34,657
Eggs, shell ¹	'000 cases 51	38	Dec. 1	71	July 1	54
Eggs, frozen.....	'000 lb. 5,820	3,208	Dec. 1	5,820	Jan. 1	4,885
Poultry, dressed and eviscerated ¹	" 27,143	17,202	June 1	65,792	Dec. 1	28,546
Pork, fresh.....	" 4,506	4,506	Jan. 1	6,742	Nov. 1	5,479
Pork, frozen.....	" 12,130	10,242	Oct. 1	26,843	May 1	17,058
Pork, cured and in cure.....	" 6,317	6,317	Jan. 1	8,964	Dec. 1	7,780
Lard.....	" 5,949	4,256	Nov. 1	7,351	Apr. 1	5,671
Beef, fresh.....	" 11,807	11,807	Jan. 1	14,445	Oct. 1	13,223
Beef, frozen.....	" 18,116	13,980	Sept. 1	20,872	Dec. 1	16,098
Beef, cured, etc.....	" 307	307	Jan. 1	766	Oct. 1	555
Veal.....	" 5,284	3,180	Apr. 1	5,660	Dec. 1	4,521
Mutton and lamb.....	" 3,314	1,327	Aug. 1	5,356	Dec. 1	2,635
Apples, fresh.....	'000 bu. 4,827	275	June 1	9,714	Nov. 1	2,516
Fruit, frozen.....	'000 lb. 29,490	17,219	June 1	42,866	Oct. 1	24,983
Fruit, in preservatives.....	" 9,555	6,167	June 1	11,389	Dec. 1	8,561
Potatoes.....	'000 cwt. 13,898	3,240	June 1	20,807	Nov. 1	7,465
1962						
Butter, creamery, dairy and whey ¹	'000 lb. 127,057	78,254	Apr. 1	158,149	Nov. 1	119,372
Cheese, cheddar ¹	" 63,993	48,195	June 1	63,993	Jan. 1	56,394
Evaporated whole milk.....	" 60,169	25,198	May 1	66,368	Oct. 1	47,390
Skim milk powder.....	" 29,875	20,753	Apr. 1	59,208	Nov. 1	36,399
Eggs, shell ¹	'000 cases 48	42	Dec. 1	128	June 1	69
Eggs, frozen.....	'000 lb. 2,954	2,954	Jan. 1	7,660	Aug. 1	5,673
Poultry, dressed and eviscerated ¹	" 43,073	18,354	Aug. 1	62,608	Dec. 1	33,553
Pork, fresh.....	" 5,360	4,511	Aug. 1	6,847	Apr. 1	5,693
Pork, frozen.....	" 15,357	8,042	Oct. 1	25,178	June 1	17,105
Pork, cured and in cure.....	" 6,341	6,341	Jan. 1	9,725	Apr. 1	7,420
Lard.....	" 6,921	3,497	Oct. 1	6,921	Jan. 1	5,117
Beef, fresh.....	" 12,847	11,198	July 1	14,764	Feb. 1	12,801
Beef, frozen.....	" 20,338	9,119	Sept. 1	20,338	Jan. 1	14,379
Beef, cured, etc.....	" 375	375	Jan. 1	577	June 1	449
Veal.....	" 3,991	2,559	Apr. 1	5,186	Dec. 1	3,564
Mutton and lamb.....	" 5,401	1,327	July 1	5,401	Jan. 1	2,499
Apples, fresh.....	'000 bu. 6,061	382	June 1	11,196	Nov. 1	3,047
Fruit, frozen.....	'000 lb. 37,189	23,416	June 1	41,460	Dec. 1	33,513
Fruit, in preservatives.....	" 11,559	7,958	July 1	12,452	Dec. 1	9,965
Potatoes.....	'000 cwt. 17,432	3,936	June 1	21,578	Nov. 1	8,816

¹ Includes amounts in transit.

Cold Storage Holdings of Fish.—Normally, stocks of frozen fish decrease gradually during the early months of the year and reach a low point at the beginning of April or May when fishing activity is at its lowest ebb; during subsequent months they increase and reach a peak at the beginning of October or November. In 1962, stocks followed the usual seasonal trend but were, on the average, slightly lower than in 1961.

The three main items in the production of frozen fish in Canada are groundfish fillets, Pacific salmon and halibut. The production of frozen groundfish fillets on the Atlantic Coast reached an all-time high of 164,000,000 lb. in 1962, 22,000,000 lb. more than in 1961. Demand for these products in the domestic and United States market was good so that year-end stocks were only slightly higher than the year before. At the beginning of the year, stocks of frozen Pacific salmon were much lower than at the beginning of 1961 but production increased by about 3,000,000 lb. and exports did not keep pace, with the result that stocks were higher in the last few months of the year. The 1962 production of frozen Pacific dressed halibut, at 17,500,000 lb., was about the same as in 1961 and prices were high. Demand was good in the United States market and stocks were, on the average, below those of 1961.

32.—Storage Stocks of Fish, by Month and by Type, 1961 and 1962

NOTE.—Stock totals are as at the beginning of each month; stocks of the individual products are monthly averages.

Month	1961	1962 ^a	Group and Product	1961	1962 ^a
	'000,000 lb.			'000,000 lb.	
Jan. 1.....	55.0	50.4	Frozen, Fresh Seafish¹	42.1	40.7
Feb. 1.....	44.2	38.8	Salmon, Pacific, dressed and filleted.....	5.0	4.7
Mar. 1.....	34.4	30.7	Halibut, Pacific, dressed.....	7.2	6.5
Apr. 1.....	28.0	23.0	Cod, Atlantic, filleted.....	9.9	12.4
May 1.....	29.9	23.3	Frozen, Freshwater Fish¹	6.4	7.0
June 1.....	36.9	30.9	Whitefish, dressed and filleted.....	1.8	2.0
July 1.....	48.7	48.0	Tullibee, round or dressed.....	0.1	0.2
Aug. 1.....	62.5	66.1	Pickereel (yellow and blue), dressed and filleted.....	1.3	0.7
Sept. 1.....	70.5	72.1	Sauger, dressed and filleted.....	0.9	0.3
Oct. 1.....	69.8	75.5	Frozen, Smoked Fish¹	1.8	2.0
Nov. 1.....	64.1	71.0	Cod, Atlantic, filleted.....	0.7	1.0
Dec. 1.....	60.2	67.1	Sea herring, dressed.....	0.5	0.5
			Haddock, dressed.....	0.2	0.2
Averages	50.3	49.7	Averages	50.3	49.7

¹ Includes other items not listed.

Subsection 3. —Storage of Petroleum and Petroleum Products

Bulk storage plants for petroleum and petroleum products are established at convenient distributing centres, often on a waterfront so that full advantage may be taken of the lower cost of water-borne traffic. From these centres the goods are transferred by boat, rail or truck to smaller distributing depots or directly to retail outlets. The principal refining and distributing centres are located at or near Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, Sarnia, Fort William, Regina, Calgary, Turner Valley, Edmonton and Vancouver.

33.—Petroleum and Petroleum Products in Storage as at Jan. 1, 1960-62

(Barrels of 35 Imperial gallons)

Product	1960	1961	1962
	bbl.	bbl.	bbl.
Crude oil.....	9,001,851 ¹	9,865,806 ¹	10,094,314
Natural gas liquids.....	32,889 ¹	186,142 ¹	126,812
Liquefied petroleum gas.....	277,377	164,828	149,132
Petrochemical feed stocks.....	41,893	27,975	123,815
Napththa specialties.....	407,034	459,148	471,213
Aviation gasoline.....	1,430,675	1,074,822	902,869
Motor gasoline.....	19,178,603	18,577,565	20,593,875
Aviation turbo-fuel.....	1,237,957	1,483,803	1,568,787
Kerosene, stove oil and tractor fuel.....	5,439,609	5,539,036	6,508,370
Diesel fuel.....	6,096,810	6,866,470	5,991,180
Light fuel oil (Nos. 2 and 3).....	17,284,700	17,589,340	20,955,047
Heavy fuel oil (Nos. 4, 5 and 6).....	5,762,987	6,521,209	7,299,747
Asphalt.....	1,350,151	1,501,845	1,638,612
Coke.....	56,858	90,805	79,943
Lubricating oil and grease.....	1,503,929	1,612,843	1,609,287
Wax and candles.....	24,119	18,264	24,409
Still gas.....	570	1,381	782
Unfinished products.....	5,442,328	5,979,438	6,869,457

¹ At refineries only.

Subsection 4.—Warehousing of General Merchandise and Refrigerated Goods

Public Warehouses.—The summary statistics of the warehousing industry in Canada presented in Table 34 cover the operations of the majority of firms offering general merchandise and refrigerated storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.

34.—Summary Statistics of Warehousing of General Merchandise and Refrigerated Goods 1958-61

Item	1958 ¹	1959 ¹	1960	1961
Companies reporting..... No.	213	204	111	108
Investment in land, warehouses, etc..... \$	63,958,833	63,834,854	64,896,124	68,178,081
Warehousing Facilities—				
General merchandise..... cu. ft.	75,295,788 ²	76,995,721 ³	50,485,820	55,527,385
Refrigerated goods..... "	30,960,505	32,550,680	30,653,893	32,058,659
Revenue—				
Storage..... \$	16,064,998	17,841,405	16,335,325	15,931,824
Cartage and moving..... \$	13,051,872	15,499,509	9,883,741	8,953,590
Miscellaneous..... \$	11,359,192	14,748,085	6,028,315	6,547,482
Total Revenue..... \$	40,476,062	48,088,999	32,247,381	31,432,906
Operating expenses..... \$	36,624,592	43,262,593	29,496,885	29,314,749
Net Operating Revenue..... \$	3,851,470	4,826,406	2,750,496	2,118,157
Employees, average..... No.	5,683	6,441	3,734	3,560
Salaries and wages..... \$	18,813,722	22,880,612	15,418,560	14,573,924
Motor Vehicles—				
Trucks..... No.	1,428	1,570	969	783
Tractors..... "	329	353	173	155
Trailers and semi-trailers..... "	427	477	228	222

¹ Includes household goods storage operators, now compiled separately (see p. 000).
cu. ft. of storage space for household goods.² Includes 21,601,100 cu. ft. of storage space for household goods.
³ Includes 1,574,620 cu. ft. of storage space for household goods.

Customs Warehouses.—Warehouses for the storage of in-bond goods are known as customs warehouses and are divided into three categories. (1) Those occupied by the Federal Government, some of which are used for examination and appraisal of imported goods and others, known as Queen's warehouses, used for the storage of unclaimed, abandoned, seized or forfeited goods. (2) Bonded warehouses operated and owned by a person other than the Crown and used for the storage and safekeeping of imported goods after entry and conforming to one of the following: (a) an entire building or part of a building completely separated from the remainder of the building by adequate partitions or walls and devoted to the safekeeping of imported goods consigned or sold to the warehouse keeper or other persons; (b) a yard, shed or other suitable enclosure or area devoted to the safekeeping of imported goods too large or too heavy for lodging in a Class 2(a) warehouse; and (c) a farm, yard or other suitable enclosure devoted to the safekeeping of horses, sheep and cattle for feeding and pasturage. (3) Sufferance warehouses for the landing, storage, safekeeping, transfer, examination, delivery and forwarding of imported goods before entry and conforming to one of the following: (a) a warehouse operated or provided by railway, express, airline and shipping companies; (b) warehouses for in-bond goods arriving by commercial motor vehicle; and (c) all sufferance warehouses not described under (a) or (b).

Subsection 5.—Bonded Warehousing and Storage of Wines

Bonded Warehousing.—The Excise Duty Branch of the Department of National Revenue considers any premises licensed under the Excise Act to be a warehouse, whether for storage of raw materials to produce finished tobacco or cigar products or for spirits or malt used for brewing. Practically the total production of spirits is placed in bonded warehouses and only a small part of the output of beer is retained in storage. Wine, unlike spirits and beer, is not secured under bond. All imports of alcoholic beverages must go through bonded warehouses before being released to Provincial Liquor Commissions or Boards, or other agencies authorized by the Commissions or Boards to take alcoholic beverages out of bond. Similarly, tobacco, cigars and cigarettes that are not stamped and duty paid are secured in bond. In addition to these warehouses, there are those in which no manufacturing or production is carried on but which are used solely for the storage of goods upon which duty has not been paid. Goods are stored in these warehouses usually for the purpose of rapid distribution and for delivery as ships' stores.

Table 35 shows the quantities of distilled liquor, tobacco, cigars and cigarettes in bond in recent years. In addition, the year-end inventories of beer in breweries amount to some 30,000,000 gal.

35.—Distilled Liquor, Tobacco, Cigars and Cigarettes in Bond, Quarterly 1958-62

Item and Quarter		1958	1959	1960	1961	1962
Distilled Liquor—						
March.....	'000 pf. gal.	123,289	126,052	135,656	143,076	151,183
June.....	"	125,661	130,082	137,554	146,072	153,663
September.....	"	125,579	130,907	137,743	146,614	153,697
December.....	"	126,057	132,054	139,070	147,659	150,695
Tobacco, Unmanufactured—						
March.....	'000 lb.	197,282	204,836	224,622	246,367	227,245
June.....	"	187,174	213,529	191,142	228,044	239,170
September.....	"	162,040	179,611	158,357	197,726 ¹	206,080
December.....	"	150,965	178,078	179,170	188,633	187,791
Cigars—						
March.....	'000	2,727	1,977	1,300	1,393	1,734
June.....	"	1,150	349	156	115	154
September.....	"	980	237	195	129	172
December.....	"	530	119	124	156	177
Cigarettes at 3 lb. or under—						
March.....	'000	4,410	5,195	9,505	4,874	7,384
June.....	"	5,341	—	3,235	7,998	9,177
September.....	"	5,531	3,139	6,805	6,018	5,692
December.....	"	6,696	5,738	3,443	3,376	6,584

¹ Excludes Newfoundland.

Beverage spirits, as shown in Table 36, refer to spirits released for consumption but not to industrial alcohol; malt used is the total malt used to produce malt beer; tobacco includes all types of manufactured tobacco products and snuff.

36.—Beverage Spirits, Malt, Tobacco and Tobacco Products Taken Out of Bond and Destined for Consumption, 1953-62

Year	Beverage Spirits	Malt Used	Cigars	Cigarettes	Tobacco
	pf. gal.	lb.	'000	'000	'000 lb.
1953.....	12,445,166	381,508,232	235,587	21,001,492	28,732
1954.....	11,946,178	370,328,106	244,248	22,113,102	26,846
1955.....	11,847,649	372,693,929	252,633	24,576,087	26,000
1956.....	13,733,393	386,064,673	255,570	26,997,705	23,272
1957.....	14,544,797	404,697,177	292,650	30,149,746	22,338
1958.....	15,777,160	385,628,053	323,124	32,404,186	23,332
1959.....	16,173,426	399,626,852	311,277	33,822,125	23,911
1960.....	16,501,382	417,348,530	332,324	34,289,354	23,988
1961.....	16,979,177	420,884,488	336,693	36,699,203	24,027
1962.....	..	444,744,348	351,566	38,682,886	24,461

Storage of Wines.—The wine industry is confined to a few localities such as the Niagara Peninsula in Ontario and the Okanagan Valley in British Columbia. Firms manufacturing native wines are not bonded, as far as the Federal Government is concerned, nor is wine in storage for maturing placed in bond. The only goods warehoused in bond in connection with wineries are sugar supplies and supplies of grape spirit distilled by the distilleries and held by the wineries for fortifying wines.

37.—Native Wine Produced and Placed in Storage for Maturing, 1952-61

Year	Ontario		Other Provinces		Totals	
	gal.	\$	gal.	\$	gal.	\$
1952.....	4,383,358	2,764,750	552,694	440,864	4,936,052	3,205,614
1953.....	3,562,498	2,237,316	572,692	430,574	4,135,190	2,667,890
1954.....	4,414,981	2,688,060	640,183	510,464	5,055,164	3,198,524
1955.....	5,059,418	3,059,868	624,670	480,491	5,684,088	3,540,359
1956.....	4,945,429	2,880,176	528,447	415,763	5,473,876	3,295,939
1957.....	4,746,998	3,151,865	656,510	437,243	5,403,508	3,589,108
1958.....	6,593,607	3,810,707	822,398	635,009	7,416,005	4,446,316
1959.....	6,078,805	3,623,075	954,626	754,565	7,033,431	4,377,640
1960.....	7,262,953	4,619,610	829,675	785,815	8,092,628	5,405,425
1961.....	7,048,122	4,313,406	1,005,541	750,845	8,053,663	5,064,250

Section 4.—Co-operative Organizations

Canadian co-operative activities continued to be dominated by marketing and purchasing associations which did a volume of business, including other revenue, amounting to \$1,430,197,000 during the year ended July 31, 1961. Other revenue, which included payment for services provided by the co-operatives such as grinding, chopping, trucking and revenue for rent, interest dividends and commissions, accounted for \$18,617,000.

Marketing and purchasing associations reported a membership of 1,324,270 during 1961, although this number includes some duplication since many individuals belong to more than one co-operative. The number of associations decreased from 1,934 in 1960

to 1,914 in 1961, mostly through amalgamations. The number of places of business declined from 5,537 in 1960 to 5,473 in 1961. Total sales of farm products were recorded at \$1,019,819,000. Grain and seed sales were valued at \$427,190,000 and represented 42 p.c. of the total sales of farm products by co-operatives: next in importance were livestock sales valued at \$270,469,000 and dairy products sales valued at \$228,550,000. Sales of eggs and poultry and fruit and vegetables, which accounted for most of the remainder, were valued at \$44,640,000 and \$33,581,000, respectively.

On the provincial level, Saskatchewan recorded the greatest value of farm products marketed co-operatively. Sales in that province amounted to \$289,762,000 and grain and seed sales accounted for 66 p.c. of that amount. Other provinces sharing substantially in the sales of farm products by co-operatives were Ontario with \$173,046,000, Alberta with \$169,008,000, Quebec with \$119,976,000, Manitoba with \$105,173,000 and British Columbia with \$59,342,000. Leading provinces for co-operative sales of merchandise and supplies were: Quebec with \$90,050,000, Saskatchewan with \$82,750,000 and Ontario with \$73,880,000. Members' equity in marketing and purchasing co-operatives increased by \$14,800,000 in 1961; no change was recorded in liabilities to the public.

Wholesale co-operatives are federations of local co-operatives which act as central marketing agencies for farm products and as wholesalers of farm supplies, machinery and consumer goods. The wholesale associations had assets amounting to \$100,610,000 in 1961, of which members' equity represented 37 p.c. Total sales of supplies and farm products by these associations amounted to \$293,773,000 an increase of 11 p.c. over the 1960 total.

In addition to the above-mentioned associations, there were 882 service co-operatives in 1961 providing a wide range of functions such as housing, rural electrification, medical insurance, transportation, grazing, custom grinding, seed cleaning, operation of farm machinery and restaurant operation. These associations had a total membership of 294,249 and assets amounting to \$110,066,000.

Data for marketing and purchasing co-operatives do not include fishermen's co-operatives. Co-operatives in this category were found in all provinces except Manitoba in 1961. They reported a total membership of 9,593, sales of fish amounting to \$16,480,000 and sales of supplies amounting to \$3,982,000.

38.—Summary Statistics of Co-operative Marketing and Purchasing Associations, Crop Years Ended July 31, 1952-61

Year	Associations	Places of Business	Shareholders or Members	Sales of Farm Products	Sales of Supplies	Total Business ¹
	No.	No.	No.	\$'000	\$'000	\$'000
1952.....	2,194	5,470	1,163,803	840,114	234,848	1,085,855
1953.....	2,221	4,987	1,195,985	874,698	245,630	1,147,590
1954.....	2,086	4,510	1,196,426	733,012	234,583	986,298
1955.....	1,949	5,016	1,199,808	704,047	228,446	941,378
1956.....	2,041	5,171	1,255,788	823,389	258,752	1,092,516
1957.....	2,022	5,023	1,363,470	817,601	283,730	1,116,002
1958.....	2,002	5,135	1,321,304	898,168	296,743	1,209,805
1959.....	1,982	5,267	1,290,462	963,330	332,943	1,315,167
1960.....	1,934	5,537	1,319,187	973,958	368,090	1,362,596
1961.....	1,914	5,473	1,324,270	1,019,819	391,761	1,430,197

¹ Includes other revenue.

**39.—Summary Statistics of Co-operative Marketing and Purchasing Associations,
by Province, Crop Years Ended July 31, 1960 and 1961**

Province and Year	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business ¹
	No.	No.	\$'000	\$'000	\$'000
Newfoundland.....1960	48	7,257	2	5,075	5,107
.....1961	47	8,763	50	5,271	5,527
Prince Edward Island.....1960	21	6,194	3,557	4,019	7,663
.....1961	21	6,454	3,309	4,955	8,350
Nova Scotia.....1960	91	30,415	9,020	18,923	28,499
.....1961	88	26,539	10,987	19,409	30,900
New Brunswick.....1960	55	14,029	9,327	9,066	18,559
.....1961	54	14,173	9,384	9,581	19,169
Quebec.....1960	601	94,567	115,714	89,760	207,998
.....1961	585	95,572	119,976	90,050	212,263
Ontario.....1960	280	160,157	184,280	67,031	255,708
.....1961	280	159,084	173,046	74,053	251,369
Manitoba.....1960	107	137,847	88,452	26,349	117,191
.....1961	110	145,200	105,173	29,120	136,729
Saskatchewan.....1960	447	472,305	260,225	77,124	343,537
.....1961	436	482,457	289,762	82,750	378,657
Alberta.....1960	169	222,795	162,568	30,526	194,534
.....1961	183	211,205	169,008	34,883	205,213
British Columbia.....1960	110	57,356	65,142	29,446	96,767
.....1961	104	58,448	59,342	28,469	88,557
Interprovincial.....1960	6	116,265	75,671	10,771	87,033
.....1961	6	116,375	79,782	13,220	93,463
Totals.....1960	1,935	1,319,187	973,955	368,090	1,362,596
.....1961	1,914	1,324,270	1,019,519	391,761	1,430,197

¹ Includes other revenue.

**40.—Products Handled by Marketing and Purchasing Co-operatives, Crop Years
Ended July 31, 1960 and 1961**

Product	1960		1961	
	Associations ¹	Value of Sales	Associations ¹	Value of Sales
	No.	\$'000	No.	\$'000
Marketing.....	972	973,958	947	1,019,519
Dairy products.....	407	220,598	394	229,664
Fruit and vegetables.....	130	41,245	123	33,581
Grain and seed.....	107	377,720	89	427,190
Livestock.....	338	276,873	357	270,469
Eggs and poultry.....	165	42,201	156	44,640
Lumber and wood.....	44	3,745	39	3,027
Honey.....	8	2,968	9	3,468
Wool.....	14	1,562	15	1,460
Fur.....	5	740	5	448
Tobacco.....	3	1,859	3	2,015
Maple products.....	3	3,635	—	—
Miscellaneous.....	63	812	73	3,857
Merchandising.....	1,599	368,090	1,480	391,761
Food products.....	835	102,419	810	106,800
Clothing and home furnishings.....	539	12,229	507	12,424
Hardware.....	707	25,760	708	26,206
Petroleum products and auto accessories.....	635	64,064	651	70,400
Feed, fertilizer and spray material.....	927	117,633	924	123,681
Machinery and equipment.....	266	12,724	250	15,895
Coal, wood and building material.....	523	24,493	529	24,710
Miscellaneous.....	571	8,768	557	11,645
Totals.....	...	1,342,048	...	1,411,580

¹ Includes duplication, as some associations market produce as well as handle supplies, some associations market more than one product and some handle many of the supplies listed.

Section 5.—Interprovincial Freight Movements*

Statistics relating to interprovincial freight movements are difficult to collect since there are no controls over, or barriers to, such trade. Provincial freight traffic statistics are available for loadings and unloadings of goods carried by rail, water, pipeline and motor transport.

Details of railway freight movement are confined to tons loaded and unloaded by province and contain a certain amount of import and export of goods shipped by water. The figures given in Table 41, however, do not give a precise measure of total interprovincial freight movement by rail; they indicate only the net interprovincial movement of railway freight, which is but one aspect of that trade. For water-borne traffic, Table 42 shows tonnages of all cargoes unloaded at Canadian ports in both interprovincial and intraprovincial trade, by province of origin. Interprovincial and international traffic carried by Canadian registered trucks is shown in Table 43.

* Revised in the Transportation Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

41.—Railway Revenue Freight Movement, by Province,¹ 1960 and 1961

Province	Loaded		Received from U.S.A. Rail Connections		Totals Carried ²	
	1960	1961	1960	1961	1960	1961
	tons	tons	tons	tons	tons	tons
Newfoundland.....	1,617,786	1,554,291	—	—	1,617,786	1,554,291
Prince Edward Island..	314,672	313,961	—	—	314,672	313,961
Nova Scotia.....	9,714,503	9,805,633	—	—	9,714,503	9,805,633
New Brunswick.....	4,005,173	3,678,785	447,628	222,837	4,452,801	3,901,622
Quebec.....	35,129,593	31,679,422	2,885,926	2,782,987	38,015,519	34,462,409
Ontario.....	39,776,080	39,076,958	19,202,046	16,803,026	58,978,126	55,879,984
Manitoba.....	6,541,697	6,475,849	379,866	342,266	6,921,563	6,818,115
Saskatchewan.....	12,348,813	13,383,237	151,263	198,252	12,500,076	13,581,489
Alberta.....	12,121,465	12,546,848	188,841	177,237	12,310,306	12,724,085
British Columbia.....	11,460,148	11,932,667	1,097,557	1,139,998	12,557,705	13,072,665
Totals.....	133,029,930	130,447,651	24,353,127	21,666,603	157,383,057	152,114,254
	Unloaded		Delivered to U.S.A. Rail Connections		Totals Terminated ²	
	1960	1961	1960	1961	1960	1961
	tons	tons	tons	tons	tons	tons
Newfoundland.....	1,948,860	1,913,959	—	—	1,948,860	1,913,959
Prince Edward Island..	538,344	439,716	—	—	538,344	439,716
Nova Scotia.....	8,959,358	9,566,931	—	—	8,959,358	9,566,931
New Brunswick.....	4,342,251	4,098,802	458,202	380,941	4,800,453	4,479,743
Quebec.....	35,052,159	30,831,648	4,955,133	4,835,231	40,007,292	35,666,879
Ontario.....	47,979,184	47,513,931	20,894,190	18,510,987	68,873,374	66,024,918
Manitoba.....	6,695,373	5,983,992	747,205	788,444	7,442,578	6,772,436
Saskatchewan.....	3,597,231	3,591,584	1,281,966	1,487,908	4,879,197	5,079,492
Alberta.....	6,576,575	6,620,837	30,903	31,527	6,607,478	6,652,364
British Columbia.....	12,222,108	14,008,215	1,981,567	1,794,593	14,203,675	15,802,803
Totals.....	127,911,443	124,569,615	30,349,166	27,829,631	158,260,609	152,399,216

¹ Class I and II railways operating in Canada.

² Freight terminated exceeds totals carried due to tonnages originated by non-reporting industrial railways which are delivered to common carrier lines for further haul and unloading.

42.—Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade, by Province, 1960 and 1961

Year and Province of Unloading	Province of Loading								Canada
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	B.C. and N.W.T.	
	tons	tons	tons	tons	tons	tons	tons	tons	tons
1960									
Nfld.	966,007	18,356	871,842	51,753	207,634	21,624	—	148	2,137,364
P.E.I.	493	—	264,840	112,027	14,607	6,497	—	—	398,464
N.S.	1,041,741	12,698	275,396	174,457	473,194	128,119	—	1,483	2,107,088
N.B.	512	44,987	487,794	170,173	280,214	16,886	—	6,006	1,006,572
Que.	191,750	63,414	1,902,343	343,727	5,732,438	4,100,861	4,614	37,055	12,376,202
Ont.	2,462	—	15,769	—	2,048,595	10,248,815	—	4,629	12,320,270
Man.	—	—	—	—	84	—	13	121	218
B.C. and N.W.T.	692	—	4,387	—	35,561	571	—	10,389,746	10,430,957
Totals, 1960	2,203,657	139,455	3,822,371	852,137	8,792,327	14,523,373	4,627	10,439,188	40,777,135
1961									
Nfld.	837,113	30,872	923,591	100,598	236,302	24,222	—	1,193	2,153,891
P.E.I.	63	—	324,888	144,499	18,144	6,651	—	—	494,240
N.S.	628,770	15,270	273,710	343,454	419,489	158,653	—	154	1,839,500
N.B.	4,630	73,403	471,237	154,931	251,763	15,683	—	4,497	976,144
Que.	210,582	39,280	2,199,595	379,802	6,100,986	6,370,254	10,108	17,194	15,327,801
Ont.	1,229	—	5,199	—	2,318,487	11,582,744	5,635	1,099	13,914,393
Man.	—	—	—	—	129	—	750	17,907	18,786
B.C. and N.W.T.	79	—	6,115	—	44,329	730	2,507	11,638,003	11,691,763
Totals, 1961	1,682,466	158,825	4,204,330	1,123,234	9,389,629	18,158,937	19,000	11,680,047	46,416,518

43.—Interprovincial and International Traffic by Canadian Registered Trucks, 1960 and 1961

Year and Province or Territory	To—Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	United States	Total
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
1960										
From—										
Atlantic Provinces	—	32	5	—	—	—	—	—	134	171
Quebec	81	—	1,091	9	—	65	—	—	262	1,508
Ontario	9	941	—	119	21	117	17	—	444	1,068
Manitoba	—	9	164	—	131	40	4	—	15	363
Saskatchewan	—	1	4	171	—	51	1	—	7	235
Alberta	—	63	82	29	93	—	215	—	12	549
British Columbia	—	1	12	5	4	166	—	47	205	440
Yukon and Northwest Territories	—	—	—	—	—	—	1	18	—	19
United States	38	268	437	32	7	26	186	—	—	994
Totals, 1960	128	1,315	1,795	365	256	466	441	102	1,079	5,947
1961										
From—										
Atlantic Provinces	—	59	4	—	—	—	—	—	157	220
Quebec	74	—	1,070	6	1	61	2	—	224	1,438
Ontario	13	1,054	—	137	41	152	26	—	451	1,874
Manitoba	—	5	202	—	186	76	11	—	13	493
Saskatchewan	—	3	11	333	—	62	—	—	6	415
Alberta	—	64	108	60	138	—	283	54	19	726
British Columbia	—	—	20	12	42	214	—	64	166	518
Yukon and Northwest Territories	—	—	—	—	—	—	9	13	—	22
United States	34	315	584	27	1	23	381	—	—	1,365
Totals, 1961	121	1,500	1,999	575	409	597	716	118	1,036	7,071

PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.—Controls Affecting the Marketing of Farm Products

Subsection 1.—Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners which, since 1912, has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935.

The Board of Grain Commissioners.*—The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three—a Chief Commissioner and two Commissioners—reporting to the Minister of Agriculture.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C. The Executive Offices of the Board and other principal offices are situated at Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west. Total personnel is approximately 1,100, including elevator staff.

On a fee basis, the Board provides official inspection (see p. 862), grading and weighing of grain, and registration of warehouse receipts. All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give direction regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator; refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four Assistant Commissioners—one in Alberta, two in Saskatchewan and one in Manitoba. These Assistant Commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the uniform quality of the top grades of Red Spring Wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

* Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.

The Grain Research Laboratory, located at Winnipeg, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples of various crops to obtain information on the current quality of all grains shipped during the crop year. Fundamental research is also undertaken; the program is directed toward better understanding of what constitutes quality in cereal grains and toward improvement in the methods of assessing quality.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act 1 p.c. of the purchase price of wheat, oats, barley, rye, flax and rapeseed purchased by such licensees.

The Canadian Wheat Board.*—The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada". The Board was at first a voluntary Board, that is, farmers had the option of marketing their wheat through it or through the private grain trade. In 1943, under the War Measures Act, the Board was made a compulsory Board, and all wheat going into commercial channels was required to be marketed through it. At the end of the War, the Transitional Powers Act continued the Board as the sole marketing agency for wheat until 1947 when the Canadian Wheat Board Act was amended. The major wartime powers of the Board were continued in the 1947 Act. It is under provisions of this 1947 legislation (RSC 1952, c. 44 and amendments) that the Board is operating today.

The Canadian Wheat Board accomplishes its objective of orderly marketing of grain through regulation and agreement. It owns no grain handling facilities but, by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic or overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters. In its sales operations, the Board endeavours to meet the wishes of overseas buyers and, on occasion, enters into direct contracts. When an exporter completes an export sale, in his capacity as an agent of the Board, he is responsible for the transaction; he completes the transaction with the buyer and settles with the Board for the purchase of the wheat from the Board.

When the commercial storage facilities are inadequate to handle all the grain produced, it is necessary for the Board to regulate the flow of grain from the producer to these forward positions. The first step is accomplished by the use of producer's delivery permits issued annually by The Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulation, the amount of grain delivered by the producer to the country elevator by the use of a quota system, and by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process—transporting the grain from the country elevators to large terminal elevators in Eastern Canada, Churchill or on the West Coast—

* Revised by R. L. Kristjanson, Executive Assistant, The Canadian Wheat Board, Winnipeg, Man.

is carried out by the railways. The Wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs are set by an agreement between the railways and the Government of Canada.

The fourth major step—storing and handling of the grain at terminal elevators—is done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William-Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Lakehead or Vancouver positions.

The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakehead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under delivery quotas established by the Board. Cash advances are interest-free as far as producers are concerned.

Western Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge, and the general level of prices received by the Board is determined by competitive conditions in world markets. The only subsidy received by the farmer in the Canadian wheat marketing system is the part payment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of 178,000,000 bu.

Subsection 2.—Controls Over Farm Products Other Than Grain*

With the growing complexity of agricultural marketing caused by the fact that the producer is more and more becoming a specialist and produces more for marketing off the farm than for his own needs, a substantial and continuing change in the approach to marketing problems is evident.

With the exception of tobacco, little or no attempt at production control has been introduced in Canada, although in some countries this also forms part of a broad program

* Prepared in the Economics Division of the Administration Branch, Department of Agriculture, Ottawa. A more detailed statement on this subject, including the history of developments leading to the present situation, appears in the 1960 Year Book, pp. 961-966.

of market control. The methods of control might be summarized as follows, although some of those mentioned may be combined in certain operations: (1) producers may organize co-operative marketing agencies; (2) producers may establish compulsory marketing boards to bargain with groups buying the product for processing or further sale; (3) producers may establish compulsory marketing boards to direct the flow of product and bargain on price; (4) producers may request the Federal Government to establish a government marketing board; and/or (5) producers may request intervention in the pricing system through an offer by the Government either to assist in financing the orderly marketing of the product or to support the price of the product in the marketplace.

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy.

There exists in Canada today considerable legislation at the federal, provincial and municipal levels which gives government agencies and farmers the power to take measures for controlling the marketing of farm products. Legislation relating to grain marketing is dealt with in Subsection 1, pp. 877-879, and an attempt is made here to cover in a general way some of the other types of legislation, with particular reference to the Agricultural Products Co-operative Marketing Act and the Agricultural Products Marketing Act. The Agricultural Stabilization Act, which provides price support for certain key products, is discussed in the Agriculture Chapter, pp. 422-423.

General Marketing Controls.—At the municipal level, many cities and towns have controls with respect to the sale of foods in certain areas or with respect to health standards. For example, most municipalities have some form of health regulation concerning milk being sold within their boundaries. This is often extended to licensing for the purpose of assuring sanitary standards on the farms where the milk originates. Similarly, zoning by-laws may not only control the areas where commercial merchandising generally can take place, but also state that public markets where fruit and vegetables and other goods are sold may operate only under fairly strict supervision of the municipality.

With respect to provincial government controls, most of the provinces enacted milk control legislation before 1940. Most of them finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to carry out some system of licensing which provides for the revocation of such licences if those engaged in the fluid milk business do not conform with the orders of the milk control board.

In all provinces with such boards, the milk control board sets the minimum price which distributors in specified markets may pay producers for Class I milk, that is, milk actually sold for fluid consumption. In Ontario and British Columbia, this minimum price is based on formulas. Most provinces also set either minimum or fixed wholesale and retail prices for fluid milk. The wholesale and retail prices are fixed in Prince Edward Island, Nova Scotia and Saskatchewan; minimum prices are established in New Brunswick, Quebec and Alberta. However, maximum, but not minimum, prices are set in Manitoba and no control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia. In these three provinces some degree of price competition between store and home delivery sales has developed.

The powers given to or requirements made by milk control boards include: (1) authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, arbitrate disputes, to examine the books and records of those engaged in the industry, issue and revoke licences, and to establish a price for milk; and (2) authority to require

bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before ceasing to accept milk from any producer, producers to give notice before ceasing to deliver milk to any distributor, and the prohibition of distributors requiring capital investment from producers.

Thus, fluid milk controls are not only widespread but also numerous. They are generally considered to be administered in the public interest as well as in the interest of those who have regular opportunities to appear before the boards in connection with requests for price changes.

Federally, the Food and Drug Directorate of the Department of National Health and Welfare has wide control over the content of foods sold. The Department of Agriculture establishes grades or quality standards for various foods and exercises some control over size and type of packages and containers used in food preparation. The Weights and Measures Division of the Department of Trade and Commerce also exercises controls in its sphere.

The Agricultural Products Co-operative Marketing Act.—In the late 1930's, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would give to the producer the maximum sales return for his product less a maximum margin for handling expenses agreed upon in advance. Thus the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has been used to a greater or lesser degree from time to time during the intervening years.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government will undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are to be made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. The payment to the producer is to be made through the sales agency on a graded basis at the time of delivery of the product.

Agreements under this Act have been made with respect to the marketing of maple products, honey, onions, potatoes, cheddar cheese, apples, peaches, apricots, cherries, oats, barley, flax, rye, corn, tobacco, fox and mink pelts, and the following seeds: alfalfa, crested wheat grass, brome grass, slender wheat grass, western rye grass, timothy, red clover, alsike clover, sweet clover, creeping red fescue, meadow fescue, and peas. Thus far the Government of Canada has suffered losses under this Act only with respect to fox pelts and potatoes. This experience indicates that any service to agriculture rendered by this Act has been at relatively small expense to the taxpayers of Canada except for minor administrative expenses, most of which have been taken care of as part of the day-to-day administration of the Department of Agriculture.

The Agricultural Products Marketing Act.—Following the withdrawal of wartime powers of the Federal Government, the Agricultural Products Marketing Act of 1949 was enacted to provide delegation for like powers to those established for marketing boards within a province for the purposes of interprovincial and export trade. A Supreme Court judgment in January 1952 cleared the validity of the Agricultural Products Marketing Act but left some doubt with respect to how licences, levies or other charges could be made by marketing boards beyond the extent of immediate administrative expenses without some approval by the Federal Government in its constitutional field of indirect taxation.

In April 1957, following a further Supreme Court judgment in respect to Ontario legislation, an amendment to the Federal Agricultural Products Marketing Act vested in the Governor in Council the right to authorize local boards to "fix, impose and collect levies or charges from persons engaged in the production or marketing of the whole or any part of any agricultural product and for such purpose to classify such persons into groups and fix the levies or charges payable by the members of the different groups in different amounts, to use such levies or charges for the purposes of such board or agency, including the creation of reserves, and the payment of expenses and losses resulting from the sale or disposal of any such agricultural product, and the equalization or adjustment among producers of any agricultural product of moneys realized from the sale thereof during such period or periods of time as the board or agency may determine".

There are at present 76 such marketing boards organized in Canada, 60 p.c. of which are in the Province of Quebec and 22 p.c. in Ontario; all other provinces with the exception of Newfoundland have one or more boards.

The annual statistical report prepared by the Economics Division of the Department of Agriculture in relation to these boards indicates that over one sixth of the farm cash income in Canada in 1961 was received from sales made under the control of provincial marketing board plans, including the following commodities: seed corn, potatoes, other vegetables, sugar beets, tobacco, hogs, certain dairy products, fruits, wool, honey, white beans, maple products, pulpwood, wheat and soybeans. As at May 31, 1963, 38 of these provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government. Five boards had received authority with regard to eight commodities to collect levies in excess of administrative expenses.

The Agricultural Products Marketing Act does not give the local or provincial marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make with such agencies outside the province. It does make it possible, however, for marketing boards to give groups within a province complete marketing control over any commodity produced in that province, or any area of that province which may be defined.

Section 2.—Combinations in Restraint of Trade*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade that serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

By amendments which came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2, 32, 33, 33A, 33B, 33C and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or lessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. While Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is likely to lessen competition unduly in respect of

* Revised by D. H. W. Henry, Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry". Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canadian competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger which has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly that has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any service he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance". The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused, or counselled the refusal of supplies to a merchant if there were reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "loss-leaders" or as bait advertising or was making a practice of engaging in misleading advertising in respect of such articles or of not providing services that purchasers of such articles might reasonably expect.

The Act provides for a Director who is responsible for investigating combines and other restrictive practices, and a Commission (the Restrictive Trade Practices Commission) which is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement, and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this hearing, the Commission prepares and submits a report to the Minister, ordinarily required to be published within thirty days.

The Act also provides for general inquiries into restraints of trade which, while not forbidden or punishable, may affect the public interest. It further provides in Sect. 31

that the courts, including the Exchequer Court of Canada, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention or directing the dissolution of a merger or monopoly as the case may be. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. By virtue of the 1960 amendments, prosecutions for offences against the substantive provisions of the legislation (other than Sect. 33C which is punishable only on summary conviction) may be taken either in the provincial courts or with the consent of the accused in the Exchequer Court of Canada. The amendment conferring jurisdiction on the Exchequer Court came into force on Dec. 1, 1960.

In the years 1957-62 the following reports of inquiries under the legislation have been published:—

- (1) The Sugar Industry in Western Canada and a Proposed Merger of Sugar Companies.
- (2) Manufacture, Distribution and Sale of Metal Culverts and Related Products.
- (3) Purchase of Pulpwood in Certain Districts in Eastern Canada.
- (4) Manufacture, Distribution and Sale of Yeast.
- (5) Production, Distribution and Sale of Zinc Oxide.
- (6) Wholesale Trade in Cigarettes and Confectionery in the Edmonton District.
- (7) Study of Certain Discriminatory Pricing Practices in the Grocery Trade.
- (8) Manufacture, Distribution and Sale of Ammunition in Canada.
- (9) Distribution and Sale of Electrical Construction Materials and Equipment in Ontario.
- (10) Sale and Distribution of Surgical Rubber Gloves and Certain Other Surgical Supplies.
- (11) The Sugar Industry in Eastern Canada.
- (12) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Gasoline in the Toronto Area.
- (13) Manufacture, Distribution and Sale of Specialty Bags and Related Products.
- (14) Automobile Insurance in Canada.
- (15) Distribution and Sale of Coal in Sault Ste. Marie, Ontario.
- (16) Production and Supply of Newspapers in the City of Vancouver and Elsewhere in the Province of British Columbia.
- (17) Manufacture, Distribution and Sale of Transparent Packaging Products and Related Products.
- (18) Manufacture, Distribution, Supply and Sale of Belts.
- (19) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price Discrimination—Supertest Petroleum Corporation, Limited).
- (20) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price Discrimination—The British American Oil Company Limited).
- (21) Distribution and Sale of Gasoline in the Toronto Area (Alleged Price Discrimination—Texaco Canada Limited).
- (22) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Cameras and Related Products (Arrow Photographic Equipment Limited).
- (23) Meat Packing Industry and the Acquisition of Wilsil Limited and Calgary Packers Limited by Canada Packers Limited.
- (24) Alleged Attempts at Resale Price Maintenance in the Distribution and Sale of Cameras and Related Products (Garlick Films Limited).
- (25) Distribution and Sale of Automotive Oils, Greases, Anti-Freeze, Additives, Tires, Batteries, Accessories and Related Products.
- (26) Manufacture, Distribution and Sale of Paperboard Shipping Containers and Related Products.
- (27) The Acquisition of the Common Shares of Hendershot Paper Products Limited by Canadian International Paper Company.
- (28) The Acquisition by Bathurst Power & Paper Company Limited of Wilson Boxes, Limited.
- (29) Manufacture, Distribution and Sale of Evaporated Milk and Related Products.
- (30) Distribution and Sale of Electric Appliances, Electric Shavers and Accessory Products (Sunbeam Corporation (Canada) Limited).

These reports and copies of the Annual Reports under the Act may be obtained from the Queen's Printer or the office of the Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

Section 3.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1962, provincial government liquor control authorities operated 950 retail stores.

Table 1 shows revenue from administration of liquor control by provincial and territorial governments. Details are given in DBS report, *The Control and Sale of Alcoholic Beverages in Canada* (Catalogue No. 63-202).

1.—Provincial Revenue from Administration of Liquor Control, Years Ended Mar. 31, 1961 and 1962

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages levied by eight provinces.

Year and Province or Territory	Net Income from Sales ¹	Sales Tax	Licences and Permits ²	Fines and Confiscations ²	Total
	\$'000	\$'000	\$'000	\$'000	\$'000
1961					
Newfoundland.....	2,377	...	2,000 ³	26	4,403
Prince Edward Island.....	1,305	392	33	15	1,745
Nova Scotia.....	11,710	...	294	61	12,065
New Brunswick.....	8,220	...	16	33	8,269
Quebec.....	32,583	2,010	14,144	326	49,063
Ontario.....	55,269	...	26,373	145	81,787
Manitoba.....	11,657	...	2,752	177	14,586
Saskatchewan.....	13,673	...	19	143	13,840
Alberta.....	19,940	...	934	332	21,206
British Columbia.....	27,898	...	514	..	28,412
Yukon Territory.....	861	79	10	9	959
Northwest Territories.....	670	...	57	—	727
Canada, 1961.....	196,163	2,481	47,146	1,272	237,062
1962					
Newfoundland.....	2,431	...	2,183 ³	26	4,640
Prince Edward Island.....	1,397	422	26	18	1,863
Nova Scotia.....	12,317	...	315	49	12,681
New Brunswick.....	9,534	...	7	35	9,576
Quebec.....	37,031	140 ⁴	16,878	432	54,481
Ontario.....	56,802	...	26,996	159	83,957
Manitoba.....	11,989	...	2,896	158	15,043
Saskatchewan.....	13,858	...	102	192	14,152
Alberta.....	21,117	...	965	383	22,465
British Columbia.....	28,866	...	526	..	29,392
Yukon Territory.....	874	80	11	8	973
Northwest Territories.....	734	...	74	—	808
Canada, 1962.....	196,950	642	50,979	1,460	250,031

¹ After provision for depreciation on fixed assets and capital expenditure net out of operating income; includes commission on general sales tax collections. ² Before deducting any payments to municipalities out of liquor control authority revenue. ³ Includes \$1,897,000 in 1961 and \$2,068,000 in 1962 commission on beer sold direct on local breweries to the public through licensed outlets under controlled prices. ⁴ The unemployment tax on sales of alcoholic beverages was repealed on Apr. 13, 1961.

Specified revenue of the Government of Canada from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection are shown in Table 2.

2.—Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1958-62

NOTE.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1958	1959	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000
On Spirits	120,279	125,901	132,240	139,823	143,616
Excise duty.....	83,653	96,551	102,354	108,502	113,689
Licences.....	7	7	7	8	8
Import duty.....	36,619	29,343	29,879	31,313	29,919
On Beer	88,419	83,243	90,573	91,165	93,257
Excise duty.....	88,226	83,058	90,704	90,971	93,051
Beer licences.....	3	3	3	3	3
Import duty.....	190	182	166	191	203
On Wine	4,170	4,609	4,686	4,920	5,223
Excise taxes.....	2,744	3,140	3,026	3,224	3,350
Import duty.....	1,426	1,469	1,660	1,696	1,873
Totals¹	212,868	213,753	227,799	235,908	242,096

¹ Drawbacks and refunds of duties and taxes have not been deducted.

Value of Sales of Alcoholic Beverages.—The figures in Table 3 do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.

3.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1960-62

Province or Territory	Spirits			Wines		
	1960	1961	1962	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	5,602	5,662	5,911	541	574	571
Prince Edward Island.....	2,470	2,609	2,763	185	234	266
Nova Scotia.....	15,362	15,899	16,923	2,452	2,564	2,771
New Brunswick.....	11,120	11,738	12,379	2,062	2,154	2,380
Quebec.....	86,873	87,635	95,406	14,972	15,737	17,642
Ontario.....	155,557	163,454	170,302	19,356	20,669	21,909
Manitoba.....	21,240	21,885	22,500	2,614	2,716	2,832
Saskatchewan.....	18,278	18,412	18,154	2,549	2,851	2,915
Alberta.....	33,444	35,034	37,011	3,135	3,639	3,911
British Columbia.....	51,227	52,359	53,890	4,971	5,520	5,951
Yukon Territory.....	968	985	1,020	96	111	123
Northwest Territories.....	788	790	792	61	74	84
Canada	402,929	416,462	437,051	52,994	56,843	61,355
	Beer			Totals		
	1960	1961	1962	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	10,287	10,700	11,547	16,430	16,936	18,029
Prince Edward Island.....	1,298	1,467	1,615	3,953	4,310	4,644
Nova Scotia.....	14,811	15,551	16,248	32,625	34,014	35,942
New Brunswick.....	9,715	10,354	11,127	22,897	24,246	25,886
Quebec.....	105,448	106,052	107,936	207,293	209,424	220,984
Ontario.....	175,298	176,744	179,388	350,211	380,867	371,599
Manitoba.....	26,691	28,655	30,065	50,545	53,256	55,397
Saskatchewan.....	22,831	25,242	24,177	43,658	46,505	45,246
Alberta.....	32,763	33,610	34,877	69,342	72,283	75,799
British Columbia.....	40,112	41,477	43,172	96,310	99,356	103,013
Yukon Territory.....	1,109	1,241	1,146	2,173	2,337	2,289
Northwest Territories.....	656	736	889	1,505	1,600	1,765
Canada	441,019	451,829	462,187	896,942	925,131	960,593

Section 4.—The National Energy Board*

The National Energy Board was established by the National Energy Board Act, 1959 (SC 1959, c. 46) for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the construction and operation of oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary or advisable in the public interest with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. The Board, which reports to the Minister of Trade and Commerce, consists of a Chairman, a Vice-Chairman and three other members.

The Act was given Royal Assent on July 18, 1959, the members were appointed by Order in Council on Aug. 10, 1959 and the Act came into force by proclamation on Nov. 1, 1959. The Act supersedes the Pipe Lines Act, formerly administered by the Board of Transport Commissioners for Canada, and the Exportation of Power and Fluids and Importation of Gas Act, formerly administered by the Standards Branch of the Department of Trade and Commerce. Provision was made in the new Act for the continuation and re-definition of authorizations issued under the two previous Acts, and in 1960 the Act was amended to extend to Dec. 31, 1961 the duration of licences to export power issued under the Exportation of Power and Fluids and Importation of Gas Act unless earlier replaced by a licence issued under the National Energy Board Act.

While the Board continued during 1962 (its third year of operations) to give detailed attention to the implementation of the National Oil Policy (announced by the Minister of Trade and Commerce on Feb. 1, 1961), it expanded its activities in each of the other areas of responsibility assigned to it by statute and outlined below.

The National Oil Policy sought the co-operation of the oil industry in achieving a series of target levels of Canadian production of oil and natural gas liquids to attain an average daily output of 640,000 bbl. in 1961 and 800,000 bbl. per day in 1963. These targets were to be achieved by the increased use of Canadian oil in domestic markets west of the Ottawa Valley and by some expansion of export sales, largely in existing markets that could be reached through established pipelines. Under the policy, importers of crude oil and petroleum products were required to report their imports to the National Energy Board which, in turn, was required to evaluate the contribution of individual companies to the production targets and to report periodically on the progress and development of the program. Although no specific target was established for the year 1962, production of crude petroleum and natural gas liquids by the end of that year reached approximately 732,000 bbl. per day, an increase of over 12 p.c. for 1962 and one comparing favourably with the rate of growth during 1961. In 1962 as compared with 1961, a significantly greater proportion of the production gain was attributable to growth in the domestic markets. Moreover, with the exception of minor volumes for special purposes, imports of crude oil into Ontario in 1962 were virtually eliminated, while imports and transfers of products of foreign origin into Canada west of the Ottawa Valley were further reduced. As a result of the National Oil Policy, the rate of growth of imports of crude petroleum into

* Prepared from the report of the National Energy Board for the year ended Dec. 31, 1962. The functions of the Board are given in greater detail in the 1961 Year Book, pp. 1022-1023.

Canada, east of the Ottawa Valley, declined and these imports became more closely related to increased demand for petroleum products in the Province of Quebec and the Maritime Provinces.

During 1962, the Board held eleven public hearings and, with the approval of the Governor in Council, issued thereafter five certificates respecting facilities of three gas pipelines, one oil pipeline and an international power line, as well as six export licences respecting electric power and energy (four) and natural gas (two).

The projects certified covered two applications of Trans-Canada Pipe Lines Limited in respect of certain additional compressor stations and facilities and other works at thirteen points in Saskatchewan, Manitoba and Ontario to be connected with its existing pipeline of the Northern Ontario Pipe Line Crown Corporation, and the conversion of certain compressor stations on the prairies to enable the use of propane as an alternative to natural gas; an application of Petroleum Transmission Company to construct a 577-mile 6 $\frac{1}{2}$ -inch diameter pipeline extending from Alberta to Winnipeg for the transmission of propane and butanes; an application of Interprovincial Pipe Line Co. to construct 41 miles of 34-inch diameter oil pipe to loop four sections of existing line in Manitoba; and an application of the Consolidated Mining and Smelting Company of Canada Limited to construct a 14.2-mile international power line to connect its Waneta station on the Pend D'Oreille River with the Bonneville Power Administration near Nelway, B.C.

The exports licensed by the Board included the following applicants in respect of electric power and energy: B.C. Power Commission, Southern Canada Power Company Limited, Consolidated Mining and Smelting Co., and Ontario-Minnesota Pulp and Paper Company Limited; and the following in respect of natural gas (butanes by pipeline): Shell Oil Company of Canada Limited and Texaco Exploration Company.

In addition to issuing the above certificates and licences, the Board issued eighteen exemption orders for gas and oil pipeline facilities under Sect. 49 of the Act which empowers it to approve the construction of pipelines or extensions not exceeding 25 miles and of miscellaneous facilities by exercising its discretion to exempt such construction from the provisions relating to certificate proceedings. Four of these exemption orders concerned the construction of 57 miles of 34-inch diameter gas pipeline by Trans-Canada Pipe Line Limited to parallel its existing system at four prairie vicinities, while three others related to construction by Westcoast Transmission Company Limited of 27 miles of various diameters of gas pipeline and of an addition to a compressor station. Four of the nine exemption orders governing oil pipelines authorized construction by the Interprovincial Pipe Line Company of additions to pump station facilities and to its pipeline at numerous points throughout its system, while another four provided for construction by Westspur Pipe Line Company of some 8,880 feet of pipeline and of additional works at Midale and other points in southern Saskatchewan.

During the year, the Board concerned itself also with requirements of the National Energy Board Act respecting the protection of the public safety, such as those providing for control of crossings by pipelines of various other utilities and vice versa, and those providing that no pipeline shall be opened for the transmission of hydrocarbons without the leave of the Board. Under the former, 295 crossing orders were processed. Under the latter, 28 applications were reviewed as to adequacy of pipeline testing and safety devices. Seventy other orders were issued on applications received under other sections of the Act.

Pursuant to its obligations (under Part II of the Act) to review matters relating to energy, and to its responsibilities (under Part VI of the Act) relating to exports of gas and electricity, the Board continued the preparation of detailed supply and demand forecasts and the development of its statistical records. Liaison was established with the Dominion Bureau of Statistics with a view to assisting in the improvement of energy statistics.

The Board participated in arrangements for studies of a national power grid, and in feasibility studies of certain large potential hydro-electric developments. It is currently participating in the work of Canadian Standards Association Committees to establish a Canadian code for the design, construction and operation of oil and gas pipelines, and for aluminum pressure piping.

Activities were intensified in the emergency planning field in conjunction with the Emergency Supply Planning Branch of the Department of Defence Production. The Board also strengthened its liaison with such international organizations as the Organization for Economic Co-operation and Development.

Section 5.—Miscellaneous Aids or Controls

Trade Standards.—The Standards Branch of the Department of Trade and Commerce consolidates under one Director the administration of the Electricity Inspection Act, the Gas Inspection Act, the Precious Metals Marking Act, the Weights and Measures Act, and the National Trade Mark and True Labelling Act.

Commodity Standards.—On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. This is exemplified in the National Trade Mark Garment Sizing Regulations which were passed on Mar. 16, 1961. In addition, where manufacturers descriptively label any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215), commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada or for which application for registration has been made, must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act. The inspection staff of the Standards Branch is engaged in the examination of advertising matter, in verifying the quality of articles offered for sale, and in checking the marks applied.

Weights and Measures.—The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada. The Act requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of sales by short weight or short measure. During 1962 more than 725,000 prepackaged articles were checked for weight or measure. The number of inspections of devices made was 494,326 compared with 500,737 in 1961. The more important inspections comprised the following: weighing machines including scales of all kinds, 237,950; measuring machines for liquids, 122,306; weights, 128,647; and other measures, 5,423. Total expenditure was \$1,235,233 in 1962 compared with \$1,215,510 in 1961 and total revenue was \$1,031,209 compared with \$1,081,603.

Electricity and Gas Inspection.—Responsibilities of the Standards Branch under the Electricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 21 districts for administration of the two Acts and staff numbers 195. During the year ended Mar. 31, 1962, 1,223,552 electricity and gas meters were tested as compared with 1,071,835 in the preceding year. Revenue derived from the testing amounted to \$968,979 and expenditure to \$1,074,548.

4.—Electricity and Gas Meter Registrations, 1952-61

Year	Electricity Meters	Gas Meters			
		Manufac- tured Gas	Natural Gas	Petroleum Gas	Total
	No.	No.	No.	No.	No.
1952.....	3,779,868	599,140	277,248	1,270	877,663
1953.....	3,968,020	593,698	298,166	429	892,293
1954.....	4,175,534	420,432	486,768	532	907,733
1955.....	4,380,889	416,338	507,875	3,147	927,364
1956.....	4,571,391	350,558	599,633	4,843	955,034
1957.....	4,748,636	67,726	943,783	4,570	1,016,079
1958.....	4,941,667	35,967	1,069,892	5,101	1,110,960
1959.....	5,157,495	32,799	1,162,678	4,266	1,199,743
1960.....	5,317,704	25,041	1,232,215	12,109	1,269,365
1961.....	5,491,388	18,841	1,314,057	14,772	1,347,670

¹ Includes five acetylene meters in 1952 and four in 1953, 1954 and 1955.

Patents.*—Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

5.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1958-62

Item	1958	1959	1960	1961	1962
Applications for patents..... No.	22,257	22,912	24,292	24,529	25,447
Patents granted..... "	16,261	18,293	22,021	22,014	21,659
Granted to Canadians..... "	1,488	1,515	1,903	2,036	1,844
Caveats granted..... "	242	296	291	281	226
Assignments..... "	19,744	20,208	22,015	22,587	24,161
Fees received, net..... \$	1,438,218	1,559,705	1,793,685	1,806,279	1,858,965

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to 21,659 in the year ended Mar 31, 1962. Roughly 68 p.c. of the patents granted resulted from inventions made by residents of the United States, 6 p.c. by residents of Britain and other Commonwealth countries and 6 p.c. by residents of Canada. Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian *Patent Office Record* gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1845 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland, Japan, Egypt, Germany, Ireland, Colombia, Czechoslovakia and Yugoslavia.

Copyrights, Industrial Designs and Timber Marks.*—Copyright protection is governed by the Copyright Act (RSC 1952, c. 55) in force since 1924. Protection is automatic without any formality. However, a system of voluntary registration is provided. Application for registration should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyright shall subsist in Canada . . . in every original literary, dramatic, musical and artistic work if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional

* Revised by the Commissioner of Patents, Department of the Secretary of State, Ottawa.

Protocol . . . or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Canada now belongs to the Universal Copyright Convention. This means that the works of Canadian authors are protected in the United States without the formality of compulsory registration or the obligation of printing in the United States, provided that, from the first publication the work bears in a prominent place the following identification: ©, followed by the name of the proprietor and the year of publication.

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States. Protection of industrial designs and of timber marks is afforded under the Industrial Design and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office.

6.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1958-62

Item		1958	1959	1960	1961	1962
Copyrights registered.....	No.	5,052	5,331	5,513	6,381	6,479
Industrial designs registered.....	"	665	684	790	795	684
Timber marks registered.....	"	3	7	—	—	1
Assignments registered.....	"	735	640	1,037	1,017	1,213
Fees received, net.....	\$	21,986	23,440	24,614	27,446	28,634

Trade Marks.*—The Trade Marks Office, a Branch of the Department of the Secretary of State, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark and every registration of a registered user. The required fee payable on application for registration of a trade mark is \$25, for advertisement of an application \$15 and for registration of a person as a registered user of a trade mark \$20.

7.—Trade Marks Registered, Years Ended Mar. 31, 1958-62

Item		1958	1959	1960	1961	1962
Trade marks registered.....	No.	3,769	3,992	3,818	4,524	4,438
Trade mark registrations assigned.....	"	3,078	2,642	2,541	3,115	3,335
Trade mark registrations renewed.....	"	3,434	1,117	1,481	1,748	1,961
Certified copies prepared.....	"	1,069	906	1,368	1,407	1,412
Fees received, net.....	\$	273,558	268,437	302,164	305,036	336,212

Subventions and Bounties on Coal.†—A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years,

* Revised by the Registrar of Trade Marks, Department of the Secretary of State, Ottawa.

† Revised by the Administrative Officer, Dominion Coal Board, Ottawa.

were designed to further the movement of Canadian coals by equalizing as far as possible their laid-down costs with the laid-down costs of imported coals in various market areas. During the year a change was made so that Eastern Canadian coals were made competitive with imported residual oils in the Maritimes and the Province of Quebec. This assistance is authorized from year to year by Parliamentary vote and payments are administered in accordance with regulations established by Orders in Council.

8.—Expenditure for Coal Subventions, by Province, 1958-62

NOTE.—Tonnages and expenditures shown in a given year, being on a calendar-year basis, are not necessarily in direct relationship; certain of the amounts include adjustments on movements of previous years.

Province		1958	1959	1960	1961	1962
Nova Scotia.....	ton	2,370,131	2,154,034	2,048,073	2,323,684	2,191,938
	\$	8,352,014	11,822,776	12,950,733	14,208,207	14,589,764
New Brunswick.....	ton	120,963	137,613	173,063	146,201	114,186
	\$	193,996	253,557	324,922	227,129	221,984
Saskatchewan.....	ton	297,892	111,006	79,377	104,807	82,511
	\$	268,479	96,751	64,248	83,161	62,359
Alberta and eastern British Columbia.....	ton	216,825	130,956	51,884	38,171	57,539
	\$	666,452	401,820	151,685	96,680	150,595
British Columbia and Alberta export.....	ton	21,533	192,857	633,913	719,840	634,855
	\$	68,982	845,895	2,852,608	3,239,279	2,408,653
Totals.....	ton	3,027,344	2,726,466	2,986,310	3,332,703	3,081,029
	\$	9,549,923	13,420,799	16,344,196	17,854,456	17,433,355

¹ Includes \$500,000 paid by the Nova Scotia Government as its share of the joint cost of certain Nova Scotia subvention payments.

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), was designed to assist the Canadian steel industry and only incidentally affects coal. It provides for the payment of 49.5 cents per ton on bituminous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Bounties paid under this authority for the years 1958-62 were as follows:—

<i>Item</i>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>
Quantity..... ton	557,445	604,234	693,581	457,950	420,036
Amount..... \$	275,935	299,096	343,323	226,685	207,918

PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

Two series of figures are included in this part which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first under the heading of "Administration of Bankrupt Estates" is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section under the heading of "Returns under the Bankruptcy and Winding-Up Act" which is compiled by the Dominion Bureau of Statistics. This series is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-Up Act) and, since 1955, includes business failures only (see p. 893). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

Administration of Bankrupt Estates.*—Federal insolvency legislation comprises the Bankruptcy Act 1949 (RSC 1952, c. 14), the Farmers' Creditors Arrangement Act 1943 (RSC 1952, c. 111), the Companies' Creditors Arrangement Act and, to some extent, the Winding-Up Act. The two Arrangement Acts are designed to avert failure and neither series of statistics therefore includes proposals or arrangements under these Acts. When such proposals or arrangements are rejected by the creditors or fail in their purpose, the proceedings may then come under the Bankruptcy Act, the bankruptcy provisions of the Farmers' Creditors Arrangement Act or, in certain circumstances, the Winding-Up Act. There are no provisions in the Companies' Creditors Arrangement Act for the liquidation or winding-up of insolvent companies.

1.—Assets, Liabilities, Assets Realized and Cost of Administration under the Bankruptcy Act, by Province, 1961

Province	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT ¹					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Total Realization	Cost of Administration	Paid to Creditors
	No.	\$	\$	\$	\$	\$
Newfoundland.....	6	45,148	293,529	24,172	13,778	10,394
Nova Scotia.....	15	282,608	521,816	127,806	28,173	99,633
New Brunswick.....	7	144,511	210,263	24,577	5,796	18,781
Prince Edward Island.....	1	1,425	10,344	900	171	729
Quebec.....	1,995	22,053,035	45,894,399	8,105,639	2,438,899	5,666,740
Ontario.....	759	17,003,012	29,497,315	4,356,235	1,627,575	2,728,660
Manitoba.....	33	966,656	2,526,873	287,857	76,160	211,697
Saskatchewan.....	36	312,182	814,686	121,773	32,139	89,634
Alberta.....	30	800,215	1,364,824	301,835	78,549	223,286
British Columbia.....	68	1,693,641	3,112,908	492,753	154,608	338,145
Totals.....	2,950	43,302,433	84,246,957	13,843,547	4,455,848	9,387,699
	PROPOSALS UNDER SECTION 27(1)(a) OF THE ACT					
	Proposals Completed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors			
	No.	\$	\$			
Newfoundland.....	—	...	...	
Nova Scotia.....	1	157,663	38,677			
New Brunswick.....	1	19,605	1,500			
Prince Edward Island.....	—	...	...	
Quebec.....	76	3,379,429	1,054,195			
Ontario.....	28	2,879,084	815,767			
Manitoba.....	—	...	...	
Saskatchewan.....	—	...	...	
Alberta.....	—	...	...	
British Columbia.....	4	500,837	67,729			
Totals.....	110	6,836,618	1,977,863²			

¹ Includes summary administration provisions of the Bankruptcy Act.

² In addition to the amount paid to creditors by the trustee, secured creditors realized direct from their security approximately \$34,797,906.

Returns under the Bankruptcy and Winding-Up Acts.†—The DBS statistics concerning bankruptcies and insolvencies cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. Certain documents relating to estates administered under these Acts have been forwarded, since July 1920, to the Dominion Statistician for statistical analysis. The Bankruptcy Act of 1949 altered the administration of bankruptcies by providing for proposals from insolvent persons. Since

* Prepared by the Superintendent of Bankruptcy, Ottawa. Early bankruptcy and insolvency legislation is reviewed in the 1952-53 Year Book, pp. 914-915.

† Prepared by the Business Finance Division, Dominion Bureau of Statistics.

July 1950, agreements made under this method have not been included with the statistics of bankruptcy, so that subsequent figures are not strictly comparable with those for previous years. Table 2 shows the number of proposals in order to give a general impression of the trend. The series was revised in 1955 to cover business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel formerly included. In Tables 2, 3 and 4 figures for the year 1955 are given on both the old and new bases.

2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1953-62

NOTE.—Figures from 1923 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1953.....	30	1,221	255	27	19	33	72	1,657
1954.....	45	1,645	414	27	30	44	73	2,278
1955.....	37	1,789	436	27	39	44	76	2,448
1955 ¹	36	1,180	406	27	37	42	67	1,795
1956.....	37	1,265	507	23	34	41	60	1,967
1957.....	54	1,359	630	26	32	55	57	2,213
1958.....	36	1,376	545	28	18	51	71	2,125
1959.....	36	1,366	658	26	20	47	76	2,229
1960.....	48	1,638	914	34	28	46	120	2,828
1961.....	47	1,450	932	39	25	62	104	2,659
1962.....	33	1,694	1,177	47	36	94	109	3,190
Proposals—	—	158	9	2	—	1	1	171
1953.....	1	416	29	4	1	1	4	456
1954.....	7	466	36	2	1	1	5	518
1955.....	9	738	49	2	—	—	14	812
1956.....	4	479	38	1	1	1	10	534
1957.....	5	395	44	1	1	1	11	458
1958.....	3	419	63	2	1	3	12	503
1959.....	9	480	96	3	—	2	11	601
1960.....	11	482	80	1	2	1	13	590
1961.....	4	479	92	—	—	3	14	592

¹ New series not strictly comparable with previous figures; see text above.

3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1953-62

NOTE.—Figures from 1924 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

Year	Agriculture, Forestry, Fishing, Trapping and Mining	Manu- fac- turing	Con- struc- tion	Transporta- tion, Communi- cations and Storage	Trade	Finance and Public Utilities	Service	Not Classified	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1953.....	53	359	124	52	650	30	286	103	1,657
1954.....	80	416	135	67	973	41	408	158	2,278
1955.....	68	305	287	116	882	44	454	292	2,448
1955 ¹	66	290	309	68	772	14	250	26	1,795
1956.....	58	342	375	83	782	28	246	53	1,967
1957.....	80	366	372	109	928	40	244	74	2,213
1958.....	67	356	367	105	882	42	295	11	2,125
1959.....	81	374	449	76	906	36	307	—	2,229
1960.....	100	323	619	129	1,229	65	363	—	2,828
1961.....	86	285	470	113	1,234	69	402	—	2,659
1962.....	93	326	573	143	1,496	82	477	—	3,190

¹ New series not strictly comparable with previous figures; see text above.

4.—Estimated Liabilities of Bankruptcies and Insolvencies, 1953-62

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1953.....	1,692	18,022	8,270	2,841	1,993	32,818
1954.....	1,029	30,825	15,036	4,675	1,577	53,142
1955.....	1,855	33,927	16,324	4,196	2,837	59,138
1956.....	2,248	28,746	16,299	3,939	2,548	53,776
1957.....	2,049	32,704	21,842	5,223	2,437	64,254
1958.....	2,508	37,266	31,349	5,683	3,056	79,863
1959.....	4,493	40,250	17,884	4,672	5,479	72,778
1960.....	2,302	50,034	34,156	3,866	5,429	95,786
1961.....	3,568	61,851	91,090	7,732	10,307	174,548
1962.....	4,714	49,133	48,352	7,075	7,246	116,520
1962.....	2,566	77,725	55,885	7,210	7,280	150,669

¹ New series not strictly comparable with previous figures; see text preceding Table 2.

5.—Bankruptcies and Insolvencies, by Industry and Economic Area, 1961 and 1962

Year and Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Totals	Total Liabilities
	No.	No.	No.	No.	No.	No.	\$'000
1961							
Agriculture, Forestry, Fishing, Trapping and Mining.....	3	45	25	5	8	86	7,892
Manufacturing.....	4	164	98	4	15	285	18,696
Foods and beverages.....	—	22	8	1	2	33	1,639
Textiles.....	—	2	1	—	—	3	149
Clothing.....	—	31	6	—	—	37	2,799
Wood products.....	2	37	20	1	10	70	4,127
Paper products and printing indus- tries.....	1	16	14	—	—	31	798
Iron and steel, transportation equip- ment, electrical apparatus and non- ferrous metals.....	1	25	35	1	3	65	7,201
Chemical products.....	—	3	1	—	—	4	619
Other industries.....	—	28	13	1	—	42	1,364
Construction.....	6	232	185	31	16	470	23,665
General contractors.....	2	85	85	16	7	195	13,535
Special trade contractors.....	4	147	100	15	9	275	10,130
Transportation, Communications and Storage.....	2	60	37	8	6	113	3,240
Railroad.....	30	652	442	65	45	1,234	46,286
Food.....	5	128	73	6	3	215	5,225
General merchandise.....	3	25	13	3	1	45	3,355
Automotive products.....	7	150	107	27	12	303	10,259
Clothing and shoes.....	1	87	58	4	8	158	5,798
Hardware and building materials.....	8	57	52	10	10	137	7,714
Furniture, appliances and radios.....	4	98	68	5	3	178	7,535
Drugs.....	—	6	4	1	2	13	629
Other.....	2	101	67	9	6	185	5,771
Finance and Public Utilities.....	2	44	17	1	5	69	5,127
Service.....	—	253	128	12	9	402	11,614
Community.....	—	11	5	—	—	16	231
Recreational.....	—	7	4	—	2	13	325
Business.....	—	39	18	2	—	59	1,762
Personal.....	—	173	85	8	4	270	8,489
Other.....	—	23	16	2	3	44	807
Totals, 1961.....	47	1,450	932	126	104	2,659	116,520

5.—Bankruptcies and Insolvencies, by Industry and Economic Area, 1961 and 1962— concluded

Year and Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Totals	Total Liabilities
	No.	No.	No.	No.	No.	No.	\$'000
1962							
Agriculture, Forestry, Fishing, Trapping and Mining.....	4	52	31	3	3	93	5,457
Manufacturing.....	2	189	111	10	14	326	28,870
Foods and beverages.....	1	14	18	3	2	38	2,488
Textiles.....	—	3	2	—	—	5	240
Clothing.....	—	35	8	1	1	45	3,266
Wood products.....	—	51	24	2	6	83	6,373
Paper products and printing industries.....	—	23	16	—	3	42	5,079
Iron and steel, transportation equip- ment, electrical apparatus and non- ferrous metals.....	1	28	29	3	2	63	9,011
Chemical products.....	—	1	2	—	—	3	110
Other industries.....	—	34	12	1	—	47	2,305
Construction.....	4	291	222	38	18	573	27,589
General contractors.....	2	111	104	18	9	244	16,769
Special trade contractors.....	2	180	118	20	9	329	10,820
Transportation, Communications and Storage.....	2	79	43	11	8	143	5,968
Trade.....	18	750	578	93	57	1,496	52,926
Food.....	2	153	59	14	9	237	8,825
General merchandise.....	3	25	22	6	—	56	4,170
Automotive products.....	6	197	149	27	7	386	8,478
Clothing and shoes.....	2	92	88	5	11	198	5,471
Hardware and building materials....	2	71	61	18	13	165	9,826
Furniture, appliances and radios....	1	75	82	14	7	179	5,876
Drugs.....	—	6	5	1	—	12	369
Other.....	2	131	112	8	10	263	9,911
Finance and Public Utilities.....	—	46	30	4	2	82	13,384
Service.....	3	287	162	18	7	477	16,475
Community.....	—	12	6	—	1	19	552
Recreational.....	—	18	11	1	1	31	1,741
Business.....	1	42	16	2	—	61	3,217
Personal.....	2	194	115	13	4	323	10,233
Other.....	—	21	14	2	1	38	732
Totals, 1962.....	33	1,694	1,177	177	109	3,190	150,669

PART IV.—PRICES*

Section 1.—Index Numbers of Wholesale Prices

The term "wholesale prices" refers in this Section to transactions that occur below the retail level. It has more of a connotation of bulk purchase and sale than of any homogeneous level of distribution.

Wholesale price indexes and individual price series have numerous uses. One of the most important is in escalator contracts which contain a price adjustment clause. Other major uses include: studies of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuation for tax purposes and inventory analysis; and studies in changes of physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

* Prepared in the Prices Division, Dominion Bureau of Statistics.

General Wholesale Index.—The general wholesale index includes prices mainly of manufacturers but also included are those of wholesalers proper, assemblers of primary products, agents and operators of other types of commercial enterprises which trade in commodities of a type, or in quantities characteristic of primary marketing functions. In the general wholesale index, prices are grouped according to a commodity classification scheme based on chief component material similarities. In addition, indexes classified according to degree of manufacture are available. In Table 1, the general wholesale index is presented for the period 1935-62. The general index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed. Table 2 gives, for the years 1953-62, the general wholesale price index and two of its integral classifications—raw and partly manufactured goods, and fully and chiefly manufactured goods; also presented in that table are two related systems—industrial materials and Canadian farm products. Annual price index numbers of non-residential building materials and residential building materials are given for 1953-62 in Tables 3 and 4, respectively. More specific indexes are published regularly in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002), which also contains current series on retail and security prices. Vol. 23 of that publication is a historical summary reaching back to the year 1867 for some series.

The DBS has introduced a new system of wholesale price indexes called *Industry Selling Price Indexes 1956=100*, referring exclusively to manufacturing industries and including approximately 100 industry and 175 commodity indexes. DBS Reference Paper No. 62-515 contains tables, explanatory text, charts and weights relating to these indexes; current indexes are published monthly in *Prices and Price Indexes*.

The general wholesale index rose 2.9 p.c. from 233.3 in 1961 to 240.0 in 1962 and thus continued its annual increases which began in 1954.

1.—General Wholesale Index Annual Averages, 1935-62

(1935-39=100)

Year	Average	Year	Average	Year	Average	Year	Average
1935.....	94.4	1942.....	123.0	1949.....	198.3	1956.....	225.6
1936.....	96.8	1943.....	127.9	1950.....	211.2	1957.....	227.4
1937.....	107.7	1944.....	130.6	1951.....	240.2	1958.....	227.8
1938.....	102.0	1945.....	132.1	1952.....	226.0	1959.....	230.6
1939.....	99.2	1946.....	138.9	1953.....	220.7	1960.....	230.9
1940.....	108.0	1947.....	163.3	1954.....	217.0	1961.....	233.3
1941.....	116.4	1948.....	193.4	1955.....	218.9	1962.....	240.0

The raw and partly manufactured goods index increased 5.3 p.c. from 212.6 in 1961 to 223.8 in 1962 and thus exceeded the increase of 1.8 p.c. shown by the fully and chiefly manufactured goods index.

2.—Annual Index Numbers of Wholesale Price Groups, 1953-62

(1935-39=100)

Year	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products		
					Field	Animal	Total
1953.....	220.7	207.0	228.8	232.3	179.4	263.8	221.6
1954.....	217.0	204.8	224.2	223.7	170.9	256.2	213.6
1955.....	218.9	209.7	224.5	236.0	180.1	245.1	212.6
1956.....	225.6	215.8	231.5	248.2	181.6	246.9	214.2
1957.....	227.4	209.4	237.9	240.3	169.2	258.0	213.6
1958.....	227.8	209.3	238.3	229.8	171.4	274.5	222.9
1959.....	230.6	210.9	241.6	240.2	176.1	271.6	223.9
1960.....	230.9	209.6	242.2	240.4	189.1	264.1	226.6
1961.....	233.3	212.6	244.5	243.2	191.7	270.0	230.9
1962.....	240.0	223.8	249.0	248.0	185.1 ^p	286.0 ^p	235.6 ^p

The indexes of building materials* showed little change over the year 1962. The non-residential index (1949=100) advanced almost steadily during the year and, at 132.9 in December, was up from 131.2 a year earlier; the annual index was 131.9 compared with 131.1 for 1961. The residential building materials index (1935-39=100, arithmetically converted to the base 1949=100 for comparability with the non-residential index) moved up from 128.2 in December 1961 to 130.0 in December 1962; the composite for the year was 1.4 points higher than in 1961.

* Details of weighting and construction and historical series appear in DBS publications *Price Index Numbers of Residential Building Materials, 1926-48* (Catalogue No. 62-505) and *Price Index Numbers of Non-residential Building Materials, 1935-52* (Catalogue No. 62-506). Revised item list and weighting for the electrical component of the non-residential building materials index, effective July 1960, is available on request.

3.—Annual Price Index Numbers of Non-residential Building Materials, 1953-62

(1949=100)

Year	Composite Index	Principal Components						
		Steel and Metal Work	Plumbing, Heating and Other Equipment	Electrical Equipment and Fixtures	Aggregate, Cement and Concrete Mix	Lumber and Lumber Products	Blocks, Brick and Stone	Tile
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	20.1	21.4	11.5	11.1	10.5	9.1	3.8
1953.....	124.4	134.7	119.2	119.6	120.2	127.8	125.9	117.1
1954.....	121.8	128.2	115.2	117.6	120.9	124.5	127.0	120.6
1955.....	123.4	129.9	118.0	121.3	120.3	127.6	127.0	120.3
1956.....	128.0	139.0	123.4	123.6	117.0	131.5	130.3	120.8
1957.....	130.0	147.7	124.1	118.4	119.4	128.7	134.0	118.5
1958.....	129.8	150.9	123.8	114.0	119.6	128.8	135.7	118.2
1959.....	131.7	152.6	126.0	119.2	118.6	131.3	137.4	118.3
1960.....	132.3	152.9	126.7	119.5	119.8	129.0	139.1	121.0
1961.....	131.1	153.2	126.3	113.8	119.8	127.6	133.0	123.9
1962.....	131.9	153.3	127.4	114.0	122.0	130.8	130.9	125.0

4.—Annual Price Index Numbers of Residential Building Materials, 1953-62

(1949=100)

Year	Composite Index	Principal Components								
		Cement, Sand and Gravel	Brick, Tile and Stone	Lumber and its Products	Lath, Plaster and Insulation	Roofing Material	Paint and Glass	Plumbing and Heating Equipment	Electrical Equipment and Fixtures	Other Materials
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	7.6	5.0	42.6	11.3	2.9	3.2	18.6	3.8	5.0
1953.....	123.9	119.5	136.3	127.5	108.8	114.8	113.5	116.0	121.9	131.4
1954.....	121.7	119.1	137.4	124.3	109.1	122.5	116.3	112.5	119.8	129.7
1955.....	124.3	117.6	138.7	127.1	106.1	128.3	122.3	115.0	132.2	131.8
1956.....	128.5	117.9	144.9	130.5	110.8	136.3	126.3	120.9	140.5	139.5
1957.....	128.4	120.9	148.2	128.9	115.9	133.0	125.5	126.3	120.6	145.5
1958.....	127.3	123.5	148.7	127.2	118.4	123.6	126.2	127.5	107.8	145.4
1959.....	130.0	121.1	150.9	130.7	119.3	125.6	127.7	128.5	116.3	147.7
1960.....	129.2	121.7	151.9	129.1	120.6	112.6	128.3	130.5	114.3	150.1
1961.....	128.3	120.5	145.0	128.0	122.6	107.1	131.2	131.0	112.0	149.1
1962.....	129.7	120.5	143.6	130.4	126.2	112.0	132.9	128.6	114.0	149.4

World Wholesale Price Indexes.—Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 5.

5.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1959-61
(1958=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, May 1963.

Country	1959	1960	1961	Country	1959	1960	1961
Belgium.....	100	101	100	India.....	104	111	113
Brazil.....	138	180	249	Iran.....	99	102	102
Britain.....	101	101	100	Israel.....	98	105	115
Canada.....	101	101	102	Korea, Republic of.....	102	113	134
Chile.....	130	137	138	Netherlands.....	101	99	98
Denmark.....	100	100	102	New Zealand.....	102	102	102
Dominican Republic (St. Domingo).....	94	97	91	Norway.....	100	101	102
France.....	105	107	110	Sweden.....	100	103	105
Germany, Federal Republic of.....	99	100	102	Switzerland.....	98	99	99
Greece.....	101	103	104	Turkey.....	120	126	130
				United Arab Republic.....	100	100	102
				United States.....	100	100	100

Section 2.—Consumer Price Index*

The purpose of the consumer price index is to measure the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. For a particular article or service, a price index number is simply the price of the article in one period of time expressed as a percentage of its price in a reference period, usually called a base period. However, indexes for individual goods may be combined to form indexes representing prices of broad groups of goods and services. Thus, the consumer price index relates to the wide range of goods and services bought by Canadian urban families. The index expresses the combined prices of such goods each month as a percentage of their prices in the base period 1949.

The group of goods and services represented in the index is called the index "basket" and "weights" are assigned to the price indexes of individual items for purposes of combining them into an over-all or composite index. The weights reflect the relative importance of items in expenditures of middle-size urban families with medium incomes. The basket is an unchanging or equivalent quantity and quality of goods and services. Only prices change from month to month and the index, therefore, measures the effect of changing prices on the cost of purchasing the fixed basket. The basket and weights now used in the index are based on expenditures in 1957 of families of two to six persons, with annual incomes of \$2,500 to \$7,000, living in cities of 30,000 population or over.

* A comprehensive description of the index is contained in the publication *The Consumer Price Index (1949=100)*—Revision Based on 1957 Expenditures (Catalogue No. 62-518).

6.—Consumer Price Index Numbers, 1935-62
(1949=100)

Year	Index	Year	Index	Year	Index	Year	Index
1935.....	59.9	1942.....	72.9	1949.....	100.0	1956.....	118.1
1936.....	61.1	1943.....	74.2	1950.....	102.9	1957.....	121.9
1937.....	63.0	1944.....	74.6	1951.....	113.7	1958.....	125.1
1938.....	63.7	1945.....	75.0	1952.....	116.5	1959.....	126.5
1939.....	63.2	1946.....	77.5	1953.....	115.5	1960.....	128.0
1940.....	65.7	1947.....	84.8	1954.....	116.2	1961.....	129.2
1941.....	69.6	1948.....	97.0	1955.....	116.4	1962.....	130.7

The behaviour of the consumer price index during the years of almost continuous economic growth following the end of the Second World War up to 1959 is discussed in the 1962 Year Book at pp. 928-929. During 1959, the upward movement in the index was far less marked than in the preceding years. For the year as a whole, the average level of consumer prices increased by 1.1 p.c. as compared with increases of 2.6 p.c. and 3.2 p.c. in 1958 and 1957, respectively. The most significant change in the pattern of price movement occurred in food prices which were fractionally lower on average in 1959. This was in marked contrast to increases of 3.0 p.c. in 1958 and 4.6 p.c. in 1957.

During 1960, consumer prices continued to reflect the relative stability of the previous year with an over-all price rise of 1.2 p.c. compared with an increase of 1.1 p.c. in 1959 over the year 1958. Changes in six of the seven component groups were quite similar; each of the six was at a higher level compared with 1959, the increases ranging from 0.9 p.c. for food to 1.8 p.c. for recreation and reading. The health and personal care component, which in the past has risen faster than any of the other components, again experienced the largest gain in 1960, rising 2.9 p.c. above the 1959 level.

In 1961, the index ranged narrowly from a low of 128.9 in February to a high of 129.7 in November. Two factors in price movement during the year were (1) the introduction of the 3-p.c. sales tax in Ontario in September, which was taken into account, and (2) the change in the exchange rate of the Canadian dollar. Although the latter was considered likely to result in higher prices on imported goods and ultimately in higher consumer prices, no evidence of this was available up to December 1961 as the index stood at just about the same level as in December 1960.

Relative price stability continued throughout 1962 for the fourth consecutive year. The annual average of 130.7 was 1.2 p.c. higher than the 1961 figure of 129.2. Increases of 1.8 p.c. and 1.9 p.c. in the food, and health and personal care groups were the largest of the year. Lesser upward movements occurred in the other components with the exception of transportation, in which a slight decline was noted.

7.—Consumer Price Index Numbers, 1953-62

(1949=100)

Year	Food	Housing	Clothing	Transportation	Health and Personal Care	Recreation and Reading	Tobacco and Alcohol	Composite Index
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	27	32	11	12	7	5	6	100
1953.....	112.6	120.0	110.1	119.2	120.1	116.7	108.0	115.5
1954.....	112.2	121.6	109.4	120.0	124.5	119.5	107.3	116.2
1955.....	112.1	122.4	108.0	118.5	126.7	122.6	107.4	116.4
1956.....	113.4	124.2	108.6	123.3	130.0	125.3	107.7	118.1
1957.....	118.6	126.7	108.5	129.9	138.2	129.8	109.4	121.9
1958.....	122.1	129.0	109.7	133.8	145.4	138.4	110.6	125.1
1959.....	121.1	131.4	109.9	138.4	150.2	141.7	114.0	126.5
1960.....	122.2	132.7	110.9	140.3	154.5	144.3	115.8	128.0
1961.....	124.0	133.2	112.5	140.6	155.3	146.1	116.3	129.2
1962.....	126.2	134.8	113.5	140.4	158.3	147.3	117.8	130.7

Table 8 gives single commodity price relatives on the base 1949=100 for a number of important items entering into the food component of the consumer price index.

8.—Urban Average and Relative Retail Prices of Staple Foods, 1953-62

(1949=100)

Year	Beef, sirloin, per lb.		Pork, rib chops, per lb.		Lard, pure, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1953.....	79.6	113.0	72.5 ¹	113.7 ¹	20.8	88.4	67.6	109.9	21.1	118.5
1954.....	77.0	109.4	66.4	116.8	26.3	112.2	57.1	92.9	21.1	118.5
1955.....	80.0	113.6	61.5	108.2	22.4	95.2	61.5	99.9	21.1	118.5
1956.....	81.6	115.9	64.4	113.2	21.8	92.9	63.2	102.7	21.2	119.1
1957.....	84.3	119.7	74.6	131.1	25.6	109.0	56.0	91.0	22.5	126.2
1958.....	94.4	134.1	72.5	127.4	24.3	103.6	57.9	94.1	23.2	130.4
1959.....	101.0	143.5	67.6	118.9	18.8	80.3	54.4	88.4	23.4	131.0
1960.....	97.7	138.8	69.8	122.8	20.0	85.2	54.5	88.6	23.7	133.0
1961.....	97.1	138.0	72.8	128.0	23.1	98.2	56.3	91.5	23.5	132.0
1962.....	107.4	152.5	74.9	131.7	22.5	95.7	53.2	86.5	23.6	132.4
	Flour, per lb.		Tomatoes, canned, 28-oz. tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1953.....	7.6	108.9	24.4	121.8	39.0	111.8	10.0	107.8	12.3	121.5
1954.....	7.7	110.2	21.5	107.4	37.5	107.6	9.4	101.8	12.8	126.8
1955.....	7.4	106.4	26.3	131.3	46.8	134.5	9.2	99.7	12.8	126.4
1956.....	7.6	108.8	27.3	136.1	49.7	142.6	9.3	100.4	13.3	131.6
1957.....	7.9	113.3	29.1	144.8	42.1	120.8	12.3	133.1	14.3	141.4
1958.....	8.0	114.3	26.6	132.2	45.7	131.2	10.6	114.4	14.8	146.3
1959.....	8.4	119.9	27.3	136.1	48.9	140.3	9.4	101.4	15.2	150.9
1960.....	8.8	125.5	27.8	138.2	58.0	166.5	9.4	101.7	15.6	154.5
1961.....	9.0	128.9	27.0	134.5	47.8	137.2	9.6	103.8	15.9	157.6
1962.....	9.8	141.0	26.6	132.7	47.3	135.9	9.5	103.4	16.4	162.2

¹ "Pork, fresh loins."

Consumer Price Indexes for Regional Cities.—Table 9 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparison. Their function is to measure percentage changes in retail prices—over a certain time in each city or city combination—of a fixed basket of goods and services representing the level of consumption of a particular group of families.

9.—Consumer Price Indexes for Regional Cities, 1953-62

(1949=100)

Year	St. John's, Nfld. (1951=100)	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon-Regina, Sask.	Edmonton-Calgary, Alta.	Vancouver, B.C.
1953.....	102.2	113.2	115.3	116.3	115.0	116.8	114.4	113.1	114.0	116.1
1954.....	102.8	114.1	116.6	116.8	116.2	118.3	115.3	114.2	114.9	117.4
1955.....	104.2	114.8	117.7	116.9	117.2	118.8	115.9	114.6	114.6	117.9
1956.....	106.8	116.1	118.8	118.4	119.2	120.6	117.2	115.8	115.7	119.6
1957.....	109.4	119.8	122.6	121.8	123.2	125.2	120.0	119.1	118.8	122.6
1958.....	112.0	122.9	125.3	125.5	125.5	128.6	123.0	122.0	121.4	125.6
1959.....	114.3	125.9	127.7	126.9	126.9	128.9	123.7	123.1	123.0	127.9
1960.....	115.5	127.2	129.2	127.9	128.6	130.4	125.6	124.4	124.1	129.0
1961.....	116.7	128.5	130.2	129.3	130.2	131.2	127.5	125.4	125.0	129.4
1962.....	117.6	130.2	131.4	130.9	131.7	132.4	129.1	127.5	126.2	129.8

World Retail Price Indexes.—In order to place changes in Canadian retail prices in perspective with those occurring elsewhere, Table 10 provides consumer price indexes for selected countries for 1959, 1960 and 1961. These indexes measure price changes only within each country and should not be used to compare actual levels of living costs from country to country.

10.—Consumer Price Index Numbers in Canada and Other Countries, 1959-61

(1958=100)

Source: *United Nations Monthly Bulletin of Statistics*, May 1963.

Country	1959	1960	1961	Country	1959	1960	1961
Belgium.....	101	102	103	Iran.....	111	122	126
Brazil (São Paulo).....	137	185	256	Israel.....	101	104	111
Britain.....	101	102	105	Korea, Republic of (Seoul)...	103	112	121
Canada.....	101	102	103	Netherlands.....	102	103	105
Chile (Santiago).....	139	155	167	New Zealand.....	104	105	106
Denmark.....	102	103	107	Norway.....	102	102	105
Dominican Republic (St. Domingo).....	100	96	93	Sweden.....	101	105	107
France (Paris).....	106	110	114	Switzerland.....	99	101	103
Germany, Federal.....	101	102	105	Turkey (Istanbul).....	127	134	138
Republic of.....	102	102	103	United Arab Republic (Cairo).....	100	101	101
Greece.....	102	102	103	United States.....	101	102	103
India.....	104	106	108				

Section 3.—Consumer Expenditure Surveys

A continuing program of surveys of family income and expenditure in urban areas was begun in 1953 and surveys have been conducted since then at two-year intervals. The primary purpose of these surveys has been to collect information for reviewing and revising, if necessary, the weights of the consumer price index. The surveys have therefore been restricted to cover only those families which were comparable in family composition and income level to the consumer price index target group which was selected for index number purposes from a nation-wide survey conducted in 1947-48. For each of the three survey periods covering 1953, 1955 and 1957, respectively, the program consisted of a series of monthly surveys in which the major objective was the collection of detailed expenditure data on food, followed by a recall survey of all expenditures and income for the same calendar year. Detailed results for each survey have been published in two series of occasional publications, of which the latest are *Urban Family Food Expenditure, 1957*, (Catalogue No. 62-516) and *City Family Expenditure, 1957* (Catalogue No. 62-517).

Summary results of the 1959 surveys appear in the 1962 Year Book at pp. 934-937 where tables are given showing how expenditure patterns varied among families grouped by income levels, and the average dollar expenditure per family and per person for major items. No expenditure surveys were taken in 1961, the decennial census year, but the regular program was resumed in 1962 when monthly surveys of food expenditure were made throughout the year and a recall survey of the complete budget was made in February and March 1963. Results of these surveys were not yet available at the time of printing.

Section 4.—Security Price Indexes*

Security price indexes measure, through time, the effect of price change on the value of a portfolio of stocks bought and held by a hypothetical investor (as opposed to the more speculative trader). The portfolio represents stocks of Canadian companies listed on the Toronto, Montreal and Canadian stock exchanges. In the case of the mining and the two supplementary indexes (primary oils and gas, and uraniums), eligible issues are for producing mines and wells only. The number of shares held for each issue is in proportion to the total number of shares outstanding. Prices in the weekly common stock indexes (investors, mining and supplementary indexes) are Thursday's closing quotations. For the monthly preferred stock indexes, prices are monthly weighted averages of the daily closing prices in which weights are daily total sales. The indexes express current prices as a percentage of prices in 1956. Monthly and certain weekly indexes appear in DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) and a weekly DBS report gives indexes on a weekly basis for all groups and sub-groups.

The investors index is comprised of three major groups, with relative importance indicated by percentage weights as follows: industrials, 67.2; utilities, 18.5; and finance, 14.3. Each major group is further divided into industry sub-groups corresponding to the Standard Industrial Classification, adopted as the basis of classification in the revision of the index to the 1956 = 100 base. The mining index is composed of two groups: base metals with a weight of 64.6 p.c. and golds with a weight of 35.4 p.c. The two supplementary indexes of common stocks—primary oils and gas, and uraniums—and the index of preferred stocks are not divided into component groups.

* All security price indexes presented in this Section are on the new base 1956 = 100; indexes presented in the 1962 and previous editions of the Year Book were on the 1935-39 = 100 base. Historical indexes on the 1956 base are available from the Prices Division, Dominion Bureau of Statistics.

11.—Investors Index Numbers of Common Stocks, by Month, 1961 to Mid-1963
(1956=100)

Year and Month	Industrials										Utilities					Finance			Investors Composite Index					
	In-dus-trial Mines	Foodstuffs	Beverages	Textile and Clothing	Pulp and Paper	Printing and Publishing	Primary Metals	Metal Fabricating	Non-metallic Minerals	Petroleum	Chemicals	Construction	Retail Trade	Industrial Total	Transportation	Pipeline	Telephone	Electric Power		Gas Distribution	Utilities Total	Banks and Loan	Investment and Total	
1961																								
Jan.....	111.4	148.3	131.2	116.3	107.2	279.1	93.3	81.3	90.8	90.6	84.4	106.8	160.7	112.7	73.7	116.4	105.6	128.3	159.1	113.3	130.1	136.7	132.4	115.6
Feb.....	115.3	159.4	137.5	118.4	110.3	292.6	95.3	87.9	98.1	91.5	83.5	115.2	166.2	117.1	77.1	121.0	106.5	131.9	176.4	117.3	132.3	145.3	136.8	120.0
Mar.....	120.9	168.3	144.5	120.2	115.1	315.3	98.0	92.7	98.3	85.8	87.5	117.8	176.1	122.5	77.3	127.6	106.7	134.6	184.8	120.1	134.8	154.4	141.6	124.8
Apr.....	128.1	168.2	147.0	124.0	115.6	336.0	101.9	97.4	96.2	103.0	85.8	116.6	178.2	133.1	79.3	137.9	108.7	130.6	186.4	122.5	136.9	164.8	146.6	129.0
May.....	142.6	180.2	155.9	129.1	115.6	347.6	104.8	95.5	96.6	104.8	84.1	116.6	186.3	137.1	85.8	137.8	120.1	135.4	189.7	128.2	139.0	175.9	151.8	134.9
June.....	140.2	180.2	158.9	131.0	116.6	326.2	100.9	96.4	93.9	103.7	84.8	115.4	170.8	130.4	86.6	137.8	118.9	129.7	185.5	128.5	139.8	179.6	156.9	136.9
July.....	136.2	179.1	160.2	136.7	120.9	343.3	100.9	94.6	93.9	100.9	90.4	105.4	183.4	134.7	85.4	133.8	118.9	129.7	185.5	125.9	141.9	185.2	166.9	139.5
Aug.....	135.8	182.4	169.4	135.9	124.4	364.1	100.2	92.6	94.7	105.1	94.5	104.4	183.4	138.3	85.9	133.9	119.4	121.2	193.8	125.1	148.4	189.3	162.6	140.1
Sept.....	132.2	181.5	173.5	139.9	122.9	366.8	99.8	94.3	93.8	105.6	97.7	108.8	189.4	138.8	87.1	139.9	121.5	129.3	193.0	128.9	147.3	191.6	162.7	139.9
Oct.....	147.0	188.2	173.0	144.8	114.6	303.3	95.7	94.9	101.3	104.4	92.0	115.3	179.5	132.8	88.8	142.4	123.7	124.3	202.4	130.2	146.5	204.8	169.8	139.9
Nov.....	146.0	186.0	181.9	153.7	119.2	315.9	97.5	104.7	108.8	94.9	94.9	112.3	172.4	135.2	88.2	149.2	127.0	121.7	218.6	133.6	151.2	204.8	169.8	139.9
Dec.....	153.0	183.9	181.0	154.5	121.1	326.8	92.9	100.0	104.1	111.6	93.4	109.1	169.8	137.0	89.3	154.8	127.8	122.6	219.4	135.4	158.1	204.6	174.2	142.0
1962																								
Jan.....	150.2	177.5	181.4	158.9	119.2	308.2	95.6	102.7	108.6	112.7	99.3	110.7	164.7	136.2	89.7	155.0	125.5	119.8	209.6	133.2	153.8	197.6	169.0	140.3
Feb.....	146.6	180.1	184.8	164.0	123.5	327.5	95.8	102.5	110.4	111.5	98.9	100.0	169.9	137.0	90.8	154.1	127.2	115.4	215.1	133.8	150.8	196.4	166.6	140.6
Mar.....	145.5	177.2	191.1	164.7	128.2	337.2	100.2	98.8	113.2	110.3	105.8	107.5	170.8	138.6	89.3	154.2	127.8	115.1	211.5	132.9	150.1	194.7	165.6	141.4
Apr.....	143.5	178.5	186.6	159.8	128.8	345.9	96.8	97.0	111.5	107.2	106.5	107.7	168.1	136.7	89.3	154.0	124.8	110.2	205.1	129.5	146.5	185.6	160.1	138.7
May.....	137.4	172.8	179.0	154.5	125.9	326.9	90.8	94.2	109.1	100.1	102.2	96.8	160.4	130.5	87.9	144.6	119.8	102.8	198.0	125.8	140.5	169.9	150.6	132.5
June.....	118.2	162.6	161.0	144.6	115.4	267.9	77.3	84.9	95.2	93.6	90.2	87.7	147.9	115.4	82.5	127.2	111.9	103.6	170.9	114.9	124.3	145.3	131.6	117.6
July.....	114.3	162.6	160.0	146.4	115.4	270.7	76.0	84.7	96.4	90.8	83.9	79.7	148.0	116.3	77.6	132.3	113.8	103.6	164.2	113.6	118.6	133.9	123.9	115.2
Aug.....	124.1	154.3	169.2	149.7	116.6	286.1	82.9	88.7	98.3	97.8	101.7	79.8	149.9	120.7	75.4	134.5	111.4	112.7	182.5	118.1	125.4	142.1	130.9	119.6
Sept.....	117.4	154.5	163.2	150.2	115.5	277.3	79.6	86.2	98.6	98.0	103.0	77.0	149.0	117.6	73.0	132.6	109.4	107.2	178.1	115.1	124.5	140.0	129.9	116.4
Oct.....	122.9	149.3	161.2	144.6	109.8	282.2	76.0	82.9	95.2	98.0	101.8	75.8	143.8	113.5	73.3	132.6	109.4	107.2	178.1	115.1	124.5	140.0	129.9	116.4
Nov.....	122.9	149.3	161.2	144.6	109.8	282.2	76.0	82.9	95.2	98.0	101.8	75.8	143.8	113.5	73.3	132.6	109.4	107.2	178.1	115.1	124.5	140.0	129.9	116.4
Dec.....	125.3	160.4	181.2	157.3	113.0	291.3	83.2	95.8	103.7	99.6	115.5	74.3	162.7	124.0	84.9	140.1	117.6	107.8	191.4	122.5	138.6	160.0	146.0	126.9
1963																								
Jan.....	130.4	171.9	189.1	171.1	121.2	306.8	88.4	101.4	113.7	100.1	121.8	81.0	167.8	129.8	87.2	144.7	123.3	125.4	196.4	130.0	143.7	171.5	153.3	133.2
Feb.....	126.4	171.9	188.0	167.2	122.7	318.6	87.7	101.6	122.6	97.0	126.3	78.6	164.2	129.0	87.8	144.8	122.3	125.6	199.8	130.1	138.2	165.5	147.7	131.8
Mar.....	125.6	172.2	189.0	165.4	124.0	305.8	88.4	102.9	128.6	97.3	127.9	77.6	163.9	129.4	86.8	147.2	123.8	127.0	201.8	131.9	139.8	165.2	148.7	132.3
Apr.....	131.4	176.4	190.6	208.1	132.8	322.0	96.1	107.6	134.6	98.6	132.7	79.6	172.2	159.7	83.6	148.5	129.3	130.5	212.8	135.7	145.6	169.3	153.9	137.6
May.....	136.6	182.6	195.3	222.6	135.2	339.2	100.9	111.7	136.1	103.1	134.4	79.3	181.7	139.6	107.7	155.3	127.8	129.8	228.6	140.2	147.4	172.5	156.1	142.1
June.....	133.6	178.5	197.2	218.5	132.0	339.4	100.4	109.7	136.1	99.3	128.8	74.0	180.9	137.4	102.0	156.0	126.9	128.3	230.2	139.3	144.9	166.7	152.5	139.9

12.—Index Numbers of Common Stock Supplementary Indexes, by Month, 1961 to Mid-1963

(1956=100)

Year and Month	Primary Oils and Gas	Uraniams	Year and Month	Primary Oils and Gas	Uraniams
1961			1962—concluded		
January.....	46.4	65.2	April.....	67.8	81.2
February.....	55.0	65.8	May.....	62.2	79.7
March.....	60.0	68.6	June.....	53.5	70.6
April.....	59.9	70.0	July.....	52.6	70.5
May.....	60.2	71.6	August.....	59.2	73.9
June.....	58.2	71.5	September.....	59.8	76.6
July.....	53.8	71.8	October.....	61.1	74.6
August.....	58.1	73.5	November.....	63.9	77.6
September.....	58.6	72.8	December.....	65.1	81.6
October.....	59.5	76.0			
November.....	66.7	78.9	1963		
December.....	72.4	75.3	January.....	65.9	86.8
1962			February.....	62.4	91.7
January.....	69.4	75.9	March.....	63.4	89.5
February.....	73.9	78.2	April.....	67.9	92.4
March.....	72.6	79.6	May.....	68.7	97.5
			June.....	64.3	96.1

13.—Index Numbers of Prices of Mining Stocks, by Month, 1959 to Mid-1963

(1956=100)

Year and Month	Gold	Base Metals	Com- posite	Year and Month	Gold	Base Metals	Com- posite
1959				1961—concluded			
January.....	112.9	78.6	90.7	April.....	95.1	81.2	86.1
February.....	113.1	79.9	91.7	May.....	97.1	87.2	90.7
March.....	113.6	81.7	93.0	June.....	97.4	86.4	90.3
April.....	112.8	74.9	88.3	July.....	101.8	92.1	95.5
May.....	114.8	72.2	87.3	August.....	112.5	93.6	100.3
June.....	114.8	72.0	87.2	September.....	109.9	89.7	96.9
July.....	115.2	73.3	88.1	October.....	108.8	90.2	96.8
August.....	113.6	73.3	87.6	November.....	113.5	95.9	102.1
September.....	108.2	66.7	81.4	December.....	112.9	97.7	103.1
October.....	109.1	67.0	81.9				
November.....	109.0	67.5	82.2	1962			
December.....	108.6	68.0	82.4	January.....	112.3	98.0	103.1
1960				February.....	109.8	96.0	100.9
January.....	103.7	69.9	83.6	March.....	109.4	95.4	100.4
February.....	108.2	65.4	80.6	April.....	107.5	94.7	99.2
March.....	108.8	61.2	78.1	May.....	116.8	91.7	100.6
April.....	103.4	61.9	76.6	June.....	123.5	84.2	98.1
May.....	89.4	62.2	71.8	July.....	123.8	82.8	97.3
June.....	85.6	62.3	70.5	August.....	116.4	83.7	95.3
July.....	85.4	61.8	70.2	September.....	114.0	80.4	92.3
August.....	94.2	63.2	74.2	October.....	108.9	74.8	86.9
September.....	97.0	64.7	76.1	November.....	105.4	79.0	88.4
October.....	105.4	63.4	78.3	December.....	102.5	81.0	88.6
November.....	107.1	65.8	80.4				
December.....	103.0	66.3	79.3	1963			
1961				January.....	105.3	84.9	92.1
January.....	110.7	70.0	84.4	February.....	111.6	82.7	92.9
February.....	100.1	71.0	81.3	March.....	109.6	83.7	92.9
March.....	95.5	75.8	82.8	April.....	107.8	85.2	93.2
				May.....	106.2	85.0	92.5
				June.....	107.6	81.5	90.8

14.—Index Numbers of Preferred Stocks, by Month, 1954 to Mid-1963

(1956=100)

NOTE.—Figures for 1927-45 are given in the 1948-49 Year Book, p. 958, and for 1946-53 in the 1956 edition, p. 1045.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Av.
1954.....	97.8	98.4	99.5	101.1	102.1	102.7	103.1	104.1	104.3	104.8	105.5	105.5	102.4
1955.....	105.7	105.9	106.0	105.5	106.0	107.0	108.0	108.2	107.7	107.8	106.9	104.6	106.6
1956.....	105.6	105.5	104.5	102.9	100.9	100.0	100.8	99.9	97.3	95.5	94.5	92.9	100.0
1957.....	93.8	94.1	93.1	92.3	92.1	90.7	90.3	89.9	88.6	87.9	88.8	90.9	91.0
1958.....	92.7	94.1	94.8	95.4	97.2	98.6	97.7	98.3	98.6	97.9	97.9	96.1	96.6
1959.....	95.1	96.0	96.1	96.3	97.4	96.6	96.8	95.8	93.4	90.9	90.3	90.2	94.6
1960.....	89.8	89.5	88.6	88.2	89.6	91.7	93.3	94.1	94.8	94.8	94.6	94.3	91.9
1961.....	95.0	95.2	94.9	96.0	97.1	97.7	98.4	98.3	99.5	100.7	100.6	99.9	97.8
1962.....	101.0	100.9	101.3	101.6	102.0	99.3	96.6	97.0	97.3	96.8	98.1	99.3	99.3
1963.....	102.0	101.5	101.2	101.9	103.9	103.5

CHAPTER XX.—FOREIGN TRADE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The subject of foreign trade covers more than the treatment of exports and imports of commodities, important though this is. In its broader sense foreign trade is made up of the total international interchange of goods, services, securities and other financial transactions, all of which are presented in their appropriate relationship in this Chapter and in Sections 3 and 4 of Chapter XXII. Following Part I, which is a review of Canada's commodity trade during 1962-63, Part II gives detailed statistics of that trade. Part III outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure. Part IV contains a review of the extent of travel between Canada and other countries in 1962 with estimates of the amount of money expended for this purpose. The Canadian balance of international payments and Canada's international investment position is covered in Chapter XXII.

PART I.—CANADIAN MERCHANDISE EXPORTS AND IMPORTS IN 1962-63*

The year 1962 was one of continued buoyancy both in Canada and in most areas abroad; this was reflected in a further substantial growth in Canadian merchandise exports and imports. Exports rose for the eighth successive year, bringing the aggregate increase in value since 1954 to 62 p.c. The rise in value of exports in 1962 of 8 p.c. from \$452,000,000 to \$6,348,000,000 was a little smaller than the 9-p.c. or \$509,000,000 increase in 1961. Apart from the consequences of changes in international prices, exports were subject in both years to the lower foreign exchange value of the Canadian dollar; on a physical volume basis, the increases were about 4 p.c. and 9 p.c., respectively. The record of 1962 exports by principal commodity groupings reveals some diverse trends and varied motivating factors. In only a few instances, e.g., grains and uranium, were exports in 1962 substantially lower than in 1961. The decrease in grains was attributable to a drop in sales to Eastern Europe and, more generally, to smaller available supplies of coarse

* Prepared by G. S. Watts, Research Department of the Bank of Canada, Ottawa.

grains. Uranium exports continued the decline that had been in progress for several years as a result of the stretch-out in the United States purchasing program. In a number of items, exports tended to be rather stagnant; newsprint exports to the United States and Britain showed little change while those to other overseas countries suffered a drop, and, in aggregate, base metals, chemicals and fertilizers remained about the same as in 1961.

1.—Canadian Merchandise Exports, by Main Commodities or Groupings, 1954 and 1960-62
(Millions of dollars)

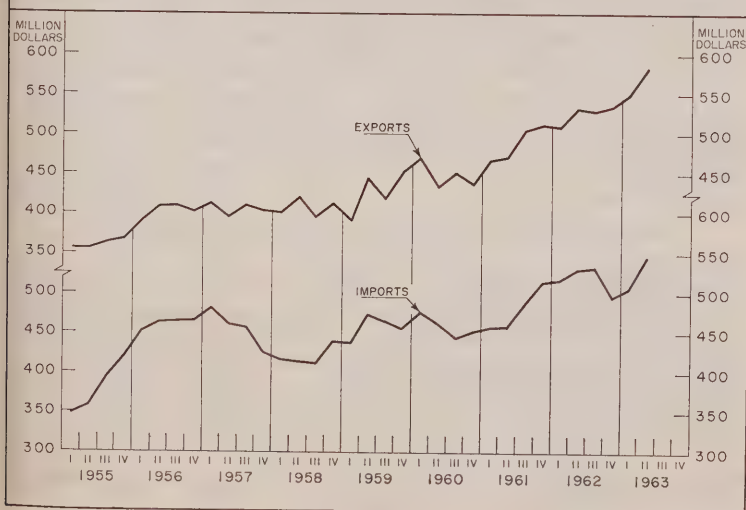
Group or Commodity	1954	1960	1961	1962
Farm and Fish Products—				
Wheat and wheat flour.....	463	473	723	659
Barley, oats and rye.....	131	61	58	46
Other farm and fish products.....	390	484	518	559
Totals, Farm and Fish Products.....	984	1,018	1,299	1,264
Forest Products—				
Softwood lumber.....	311	323	335	371
Wood pulp.....	271	325	347	370
Newsprint.....	636	758	761	753
Other forest products.....	146	181	180	207
Totals, Forest Products.....	1,365	1,587	1,623	1,701
Minerals and Mineral Products—				
Iron ore.....	40	155	143	221
Primary iron and steel.....	44	161	157	162
Aluminum and products.....	185	269	252	294
Copper, nickel and products.....	317	473	530	523
Lead, zinc and products.....	99	90	88	87
Crude petroleum and natural gas.....	6	112	196	305
Uranium ores and concentrates.....	8	264	193	166
Other metals and minerals.....	218	289	301	306
Totals, Minerals and Mineral Products.....	917	1,814	1,858	2,063
Chemicals and fertilizers.....	153	238	251	248
Other manufactures and miscellaneous.....	441	600	724	902
Exports of foreign produce.....	65	129	140	169
Totals, Exports.....	3,926	5,387	5,895	6,348

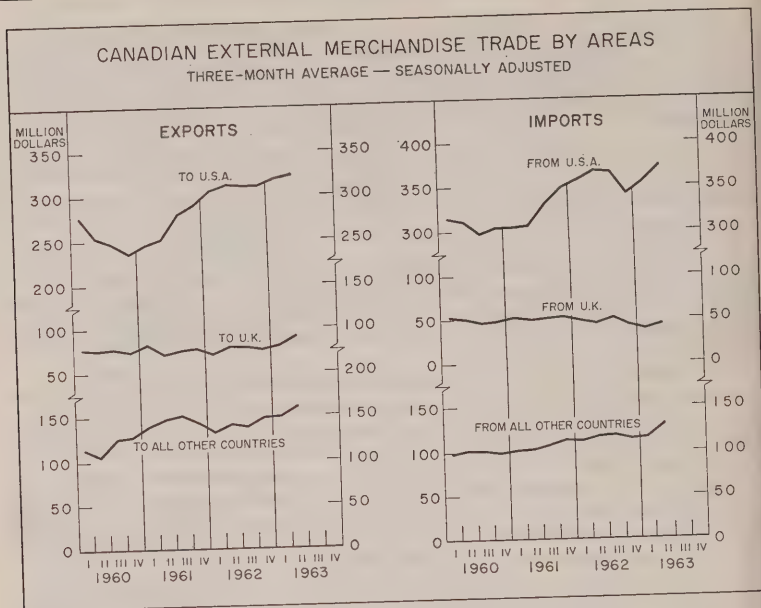
On the other hand, exports of lumber and wood pulp, miscellaneous farm and fish products, iron ore, aluminum, oil and gas and manufactured goods all rose substantially. Lumber and wood pulp responded to improved conditions in the United States and iron ore in particular to the recovery in the scale of steel operations and the availability of new sources in Canada. Oil and gas exports, which advanced from \$196,000,000 in 1961 to \$305,000,000 in 1962, reflected stronger U.S. market conditions, and the fact that this was the first full year of operation of new gas transmission facilities to the United States. While the lower foreign exchange value of the Canadian dollar undoubtedly created a favourable environment for prosecuting export opportunities, it seems likely that the main increases in exports of raw and semi-manufactured materials were attributable primarily to other factors, particularly in those large areas where prices are quoted in U.S. dollars. Yet, on the other hand, in the increase in manufactured and miscellaneous products from \$719,000,000 in 1961 to \$902,000,000 in 1962, accounting for almost 40 p.c. of the total increase, the change in the exchange rate during the year plus previous reductions in the external value of the Canadian dollar provided an effective improvement in the Canadian competitive position in a wide range of goods. The increase in manufactured and miscellaneous goods in 1962, though distributed over a wide range of products, was most pronounced in aircraft and machinery and equipment.

Following the War, with heavy exports connected with postwar reconstruction, the share of Canada's exports going overseas was half or better. Later, throughout most of the 1950's, the overseas portion fell to an average of around 40 p.c. In 1960 and 1961 it rose to 44 p.c. and 46 p.c., respectively, as a result of heavier shipments abroad of a number of items, particularly wheat. In 1962 exports to the United States rose by \$530,000,000 or by more than the over-all increase and, as a result, the overseas share fell back to around 41 p.c. This was attributable to the drop in wheat exports to Eastern Europe, as previously noted, and lower overseas exports of newsprint, primary iron and steel, aluminum and other base metals. Primarily, however, it was attributable to the fact that the strongest growth occurred in items such as oil and gas, iron ore, lumber and pulp and certain manufactured items, the natural markets for which are predominantly in the United States. Only in manufactured and miscellaneous goods were Britain's and other overseas markets strong. Exports to Japan fell off somewhat in 1962 but Japan remained Canada's third largest customer. Exports to Germany and Belgium were lower in 1962 but were offset by increases to Italy and the Netherlands. Elsewhere, lower exports to India, Pakistan and Hong Kong were counterbalanced by sharply higher exports to Australia.

The following charts indicate that, while exports showed an irregular but upward trend during 1962, imports moved in a much less consistent fashion when shown on a seasonally adjusted basis. They rose sharply and steadily during the first half of the year and fell off equally sharply and by a greater degree in the final months of the year. The increase of \$487,000,000 in 1962 was substantially greater than in 1961. Largely as a result of the drop in the foreign exchange value of the Canadian dollar, the 8-p.c. increase in value was only about 3 p.c. in terms of physical volume compared with 2 p.c. in 1961. While 1962 imports were almost 14 p.c. higher in value than in the previous peak year (1959), the increase in physical volume was scarcely 4 p.c.

CANADIAN EXTERNAL MERCHANDISE TRADE
THREE-MONTH AVERAGE — SEASONALLY ADJUSTED





From Table 2, which classifies imports on a functional basis, it may be seen that the increases in 1962 were well spread over industrial materials, investment goods and consumer goods.

2.—Imports into Canada classified by End-Use, 1960-62
(Millions of dollars)

Item	1960	1961	1962
Fuels and lubricants.....	478	473	487
Industrial Materials—	353	378	422
Textile and fur materials.....	423	448	529
Metal materials.....	291	318	346
Chemical materials.....	388	408	430
Other.....	1,455	1,552	1,727
Totals, Industrial Materials.....	1,455	1,552	1,727
Investment Goods—	940	968	1,093
Machinery and parts.....	233	234	302
Electrical machinery.....	270	406	365
Aircraft, transport equipment and parts.....	232	216	221
Construction materials, structural steel and pipe.....	1,675	1,824	1,981
Totals, Investment Goods.....	1,675	1,824	1,981
Consumer Goods—	572	618	650
Foods, beverages and tobacco.....	151	149	120
Clothing, household textiles and leather goods.....	488	439	539
Passenger autos, engines and parts and finished vehicles.....	223	227	203
Household durables and semi-durables.....	395	433	492
Other manufactured goods.....	1,829	1,866	2,004
Totals, Consumer Goods.....	1,829	1,866	2,004
Special items.....	46	53	60
Totals, Imports.....	5,483	5,771	6,258

Imports of fuels and lubricants, although a little higher than in the two previous years, continued steady and well below previous peaks, reflecting the increasing share of consumption of domestic fuels in Canada. Greater reliance on expanded domestic sources is also in evidence in structural materials and pipe, in automobiles and in clothing, textiles and leather and consumer durables and semi-durables.

During 1962 imports were not only subject to the deterrent effect of the cumulative fall in the foreign exchange value of the Canadian dollar—some 11 p.c. from the levels of the late 1950's—but in June import surcharges were imposed at the time of the foreign exchange crisis, ranging from 5 p.c. to 15 p.c. and covering approximately half of total imports. Some surcharges covering imports valued at approximately \$500,000,000 in 1961 were removed in October and November 1962 and the remainder in February and March of 1963.

The increase in imports in 1962 also came mainly from the United States. Imports from Britain fell off slightly, while imports from other overseas countries, continuing their upward trend, rose by \$107,000,000. The sources of these increases were widely dispersed over all areas. The share of imports coming from the United States has fluctuated a little above or below 70 p.c. for many years. Since 1954 when it reached its highest point in the 1950's (almost 73 p.c.), the United States proportion fell fractionally but consecutively to 67 p.c. in 1961. In 1962, however, the trend was reversed and it rose to 68.7 p.c. or about the same as in 1958.

The first merchandise export surplus since 1953 occurred in 1961 when it amounted to \$125,000,000; this was in marked contrast to the import surpluses of previous years ranging from \$100,000,000 to more than \$700,000,000. In 1962 the greater increase in imports over exports reduced the surplus to \$90,000,000.

The trade returns for the first eight months of 1963 show a continuation of the improvement in exports. Total exports were about 7 p.c. higher than in the same period of 1962. Imports, on the other hand, were about the same as in the corresponding period of the previous year, although the latter months were higher than the abnormally low first quarter. In the first half of 1963, details available for exports indicate the increase to have been predominantly in lumber, aluminum, copper and nickel and manufactured and miscellaneous goods.

From January to August, inclusive, the over-all trade balance shifted from a deficit of \$98,000,000 in 1962 to a surplus of \$175,000,000 in 1963. The share of exports going to countries other than the United States recovered to 44 p.c. Imports from both Britain and the United States were lower than a year previously, while those from other countries were somewhat higher.

PART II.—FOREIGN TRADE STATISTICS*

Section 1.—Explanatory Notes on Canadian Trade Statistics

Sources.—Canadian foreign trade statistics are compiled from information recorded on customs documents received in the Dominion Bureau of Statistics from the various customs ports in Canada (except for exports of electric energy, which are based on data received from the National Energy Board). Record is kept of value and, whenever possible, of quantity. In considering these trade figures, it should be noted that the statistics do not necessarily reflect the financial transactions relating to the movement of goods since the method and time of payment are affected by many factors.

* Based on statistics taken from reports published by the External Trade Division, Dominion Bureau of Statistics.

Coverage.—"Domestic exports" or "exports of Canadian produce" include exports of goods wholly produced in Canada together with exports of previously imported goods that have been changed in form by further processing in Canada. "Re-exports" or "exports of foreign produce" include previously imported goods that are exported from Canada in the same form as when imported.

"Imports" or "imports entered for consumption" include all goods that enter Canada and are cleared through customs for domestic sale or use, i.e., imports on which all duties are paid and which have passed from customs control into the possession of the importer. Goods re-exported without being cleared for domestic consumption are not included. It should be noted that the fact that imports have been "entered for consumption" does not necessarily imply that the goods will all be consumed in Canada but only that consumption can take place without further customs formalities.

The most important exclusions from export totals are: gold, goods shipped to Canadian Armed Forces or diplomats stationed abroad, goods financed under the Defence Appropriation Act and shipped to other NATO countries, temporary exports for exhibition or competition, fuel and stores sold to foreign vessels and aircraft in Canada, settlers' effects, private donations and gifts, and identifiable tourist purchases.

The most important exclusions from import totals are: gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadian-owned military equipment returned to Canada, ships imported for use in foreign trade and ships of British construction and registry imported for use in the coasting trade, temporary imports for exhibition or competition, fuel and stores purchased by Canadian vessels and aircraft abroad, settlers' effects, private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada.

From Jan. 1, 1960, a new category was established in both export and import statistics entitled "Special Transactions—Non-Trade". This category includes certain commodity movements which either have no international financial implications or, for various reasons, are better considered separately from merchandise trade in economic analysis. The value of transactions of these types is now excluded entirely from published totals of Canadian merchandise trade, and do not appear in this volume, but statistics for the classes of this category are contained in the regular monthly export and import reports.

Beginning with statistics for January 1961, a new Export Commodity Classification was used, based on the Standard Industrial Classification developed in the DBS as a tool for integrating statistical series derived from different sources. Whereas the classification previously used classified commodities primarily according to the material of which they were chiefly composed, the new classification places commodities in sections mainly according to stage of processing and purpose, as follows: Live Animals; Food, Feed, Beverages and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; End Products, Inedible; and Special Transactions—Trade.

As part of the change to the new classification, the commodity detail shown in export statistics has been modernized by eliminating statistics on many commodities of minor significance and instituting new classes for many commodities of greater importance. The grouping system employed in the new classification also makes easier the identification of other commodities which may merit separate specification. For most of the commodities of greatest importance in Canadian exports, the classes of the new Export Commodity Classification are substantially identical with those of its predecessor.

It is expected that a similar new commodity classification will be introduced for import statistics in 1964.

Valuation.—Exports are normally valued f.o.b. point of consignment from Canada, i.e., at the actual amount received or to be received by the exporter in Canadian dollars, exclusive of inland freight, ocean freight, insurance, handling and other charges.

Imports are normally valued f.o.b. point of consignment to Canada, i.e., excluding inland freight, ocean freight, insurance, handling and export or import duties. The statistical value of imports is usually the value as determined for customs duty purposes, which is basically the fair market value at which equivalent goods would be sold for home use in the country from which the imports were received; the customs value of imports usually corresponds to the invoice value of the goods. From Jan. 1, 1959, the statistical value of imports on which dumping duty has been collected is considered to be the value of the goods as declared by the importer, i.e., the value for duty less the amount of the dumping duty. This change was introduced to conform with the principle that trade statistics should show, whenever possible, the actual amount paid for imports; previously the statistical value of such imports was considered to be the value for duty.

Country Classification.—Trade is credited to countries on the basis of consignment. For exports from Canada, the country of consignment is that country to which goods are, at the time of export, intended to pass without interruption of transit except in the course of transfer from one means of conveyance to another. For imports into Canada, the country of consignment is the country from which the goods came without interruption of transit except in the course of transfer from one means of conveyance to another. This is not necessarily the country of actual origin, since goods produced in one country may be imported by a firm in another country and re-sold to Canada; in such cases the second country is the country of consignment to which the goods are credited. There is one exception to this rule; an attempt is made to classify by country of origin goods produced in South America, Central America, Bermuda and the Antilles and consigned to Canada from the United States. The effect of this procedure, in force since 1946, is to reduce slightly the imports credited to the United States and to increase those credited to South and Central American countries.

The country sub-totals, which formerly related to Commonwealth countries only, now include trade with other countries entitled to Preferential rates of duty (the Republic of Ireland and the Republic of South Africa). These totals are now described as "Commonwealth and Preferential".

Discrepancies in Trade Statistics between Canada and Other Countries.—

Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include:—

- (1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.
- (2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.
- (3) Differing definitions of territorial areas.
- (4) Differing systems of geographical classification of trade, notably the consignment system used by Canada and the actual origin or ultimate destination system in use by some other countries.
- (5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 6, reference should be made to the explanatory notes on trade in Section 1. Exports and imports of gold are excluded from all tables.

1.—Value of Total Foreign Trade of Canada (excluding Gold), 1948-62

NOTE.—Figures have been revised to cover the adjustment for "Special Transactions—Non-Trade"; see p. 912.

Year	Exports			Imports			Balance of Trade: Excess of Exports (+) Imports (—)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	3,052,090	34,441	3,086,531	1,382,203	1,236,074	2,618,276	+ 468,254
1949.....	2,974,969	29,428	3,004,397	1,444,124	1,269,902	2,714,025	+ 290,372
1950.....	3,104,016	38,620	3,142,636	1,621,534	1,503,697	3,125,231	+ 17,406
1951.....	3,897,082	48,847	3,945,929	2,174,304	1,830,635	4,004,939	— 59,011
1952.....	4,282,361	54,814	4,337,175	2,162,882	1,753,535	3,916,418	+ 420,757
1953.....	4,097,111	55,158	4,152,269	2,417,960	1,829,848	4,247,808	— 95,539
1954.....	3,860,217	65,604	3,925,821	2,311,568	1,655,833	3,967,401	— 41,580
1955.....	4,258,328	69,448	4,327,776	2,638,037	1,929,718	4,567,754	— 239,978
1956.....	4,760,442	73,335	4,833,777	3,292,516	2,254,435	5,546,951	— 713,175
1957.....	4,788,880	95,261	4,884,141	3,223,197	2,250,149	5,473,346	— 589,205
1958.....	4,791,436	102,907	4,894,343	2,952,707	2,097,785	5,050,492	— 156,150
1959.....	5,021,672	118,628	5,140,300	3,143,065	2,365,856	5,508,921	— 368,621
1960.....	5,255,575	131,217	5,386,792	3,048,583	2,434,112	5,482,695	— 95,903
1961.....	5,754,986	140,229	5,895,215	3,115,408	2,653,170	5,768,578	+ 126,637
1962.....	6,178,523	169,190	6,347,713	3,479,930	2,777,884	6,257,814	+ 89,899

Treatment of Gold in Trade Statistics.—The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed minimum price. Also, gold may be bought or sold internationally without any physical movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons movements of gold in a primary or semi-fabricated state are excluded from the totals of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

2.—New Gold Production Available for Export, by Month, 1955-62

NOTE.—Since Mar. 21, 1956, mines not receiving aid under the Emergency Gold Mining Assistance Act have been allowed to sell their gold to private residents and non-residents, either for export or for safe-keeping in Canada. Such sales, commencing in April 1956, are included in the figures of new gold production available for export.

(Millions of dollars)

Month	1955	1956	1957	1958	1959	1960	1961	1962
January.....	11.5	12.5	13.6	14.7	11.7	14.5	14.1	9.8
February.....	14.7	12.7	12.4	17.7	16.1	15.0	14.2	18.1
March.....	12.2	12.4	11.7	11.1	9.8	14.3	12.8	14.6
April.....	10.9	12.3	10.7	10.7	14.1	9.4	13.3	10.3
May.....	15.0	13.4	15.1	12.9	12.9	12.4	15.2	17.6
June.....	13.3	12.8	5.0	14.7	13.8	13.3	13.9	13.6
July.....	11.9	10.8	12.7	13.6	11.4	11.7	12.7	11.5
August.....	13.1	14.0	3.4	11.4	11.1	14.4	14.8	16.2
September.....	12.2	12.1	9.9	12.6	10.3	15.7	13.1	11.6
October.....	11.7	12.1	16.0	13.9	9.4	12.3	11.1 ⁺	13.6
November.....	15.0	12.0	16.1	11.4	12.6	11.7	16.3	16.4
December.....	13.4	10.1	17.1	12.4	15.1	16.8	10.7	11.7
Totals.....	154.9	147.2	143.7	157.1	148.3	161.5	162.2⁺	165.0

Section 3.—Trade by Geographic Area

The tables in this Section provide information about Canada's total foreign trade by geographic region and by country.

**3.—Trade of Canada with Commonwealth and Preferential Countries,
and Other Countries, 1946-62**

Item and Year	Britain		Other Common- wealth and Prefer- ential Countries		United States ¹		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
	\$'000		\$'000		\$'000		\$'000	
Domestic Exports								
1946.....	594,138	26.1	301,411	13.3	884,066	38.9	492,390	21.7
1947.....	746,718	27.1	405,485	14.8	1,030,101	37.4	570,495	20.7
1948.....	683,249	22.4	337,880	11.1	1,498,552	49.1	532,409	17.4
1949.....	702,074	23.6	309,214	10.4	1,504,768	50.6	458,913	15.4
1950.....	467,896	15.1	197,654	6.4	2,020,703	65.1	417,763	13.4
1951.....	630,124	16.2	260,889	6.7	2,296,235	58.9	709,834	18.2
1952.....	744,461	17.4	283,809	6.6	2,302,673	53.8	951,418	22.2
1953.....	662,785	16.2	244,745	6.0	2,413,318	58.9	776,263	18.9
1954.....	651,033	16.9	202,561	5.2	2,308,670	59.8	697,953	18.1
1955.....	767,642	18.0	248,624	5.9	2,547,636	59.8	694,426	16.3
1956.....	811,113	17.0	252,117	5.3	2,803,085	58.9	894,127	18.8
1957.....	720,898	15.1	240,016	5.0	2,846,646	59.4	981,320	20.5
1958.....	771,576	16.1	290,125	6.1	2,808,067	58.6	921,667	19.2
1959.....	785,802	15.7	281,462	5.6	3,083,151	61.4	871,257	17.3
1960.....	915,290	17.4	333,815	6.4	2,932,171	55.8	1,074,300	20.4
1961.....	909,344	15.8	328,854	5.7	3,107,176	54.0	1,409,612	24.5
1962.....	909,041	14.7	331,004	5.4	3,608,439	58.4	1,330,040	21.5
Imports								
1946.....	137,423	7.5	135,601	7.4	1,387,386	75.3	180,857	9.8
1947.....	184,207	7.2	164,553	6.5	1,951,606	76.8	242,293	9.5
1948.....	293,535	11.2	203,932	7.8	1,798,507	68.7	322,302	12.3
1949.....	302,420	11.1	186,306	6.9	1,915,227	70.6	310,072	11.4
1950.....	400,811	12.8	241,124	7.7	2,089,531	66.9	393,765	12.6
1951.....	415,194	10.4	306,287	7.6	2,752,087	68.7	531,371	13.3
1952.....	351,541	9.0	184,345	4.7	2,887,628	73.7	492,904	12.6
1953.....	445,441	10.5	170,224	4.0	3,115,301	73.3	516,842	12.2
1954.....	382,229	9.6	181,884	4.6	2,871,279	72.4	532,010	13.4
1955.....	393,117	8.6	209,265	4.6	3,331,143	72.9	634,229	13.9
1956.....	476,371	8.6	220,803	4.0	4,031,394	72.7	818,378	14.7
1957.....	507,319	9.3	239,054	4.4	3,887,391	71.0	839,582	15.3
1958.....	518,505	10.3	210,016	4.2	3,460,147	68.5	861,824	17.0
1959.....	588,573	10.7	241,241	4.4	3,709,065	67.3	970,042	17.6
1960.....	588,932	10.8	281,167	5.1	3,686,625	67.2	925,971	16.9
1961.....	618,221	10.7	292,155	5.1	3,863,968	67.0	994,233	17.2
1962.....	563,062	9.0	318,501	5.1	4,299,539	68.7	1,076,711	17.2

¹ Includes Alaska and Hawaii.

4.—Trade of Canada, by Leading Countries, 1960-62

Rank in—			Item and Country	1960	1961*	1962
1960	1961*	1962		\$'000	\$'000	\$'000
Domestic Exports						
			United States.....	2,932,171	3,107,176	3,608,439
1	1	1	Britain.....	915,290	909,344	909,041
2	2	2	Japan.....	178,859	231,574	214,535
3	3	3	Germany, Federal Republic.....	165,597	188,694	177,688
4	4	4	China, Communist.....	8,737	125,448	147,438
31	5	5	Australia.....	98,862	78,628	104,965
5	6	6	Netherlands.....	62,554	61,297	76,940
9	11	7	Italy.....	68,393	67,688	74,521
8	10	8	Norway.....	61,595	69,744	69,054
10	9	9	Belgium and Luxembourg.....	69,131	76,055	68,169
7	7	10	France.....	72,907	71,923	57,561
6	8	11	Venezuela.....	35,345	34,978	42,328
14	16	12	Mexico.....	38,023	38,529	41,267
12	13	13	Republic of South Africa.....	52,655	37,819	37,525
11	14	14	Poland.....	16,665	36,819	37,391
22	15	15	India.....	36,814	43,330	29,633
13	12	16	Brazil.....	19,755	30,076	28,481
19	21	17	New Zealand.....	23,858	31,125	26,784
16	18	18	Switzerland.....	26,404	22,422	23,891
15	23	19	Argentina.....	19,364	30,893	22,546
20	20	20	Jamaica.....	18,056	19,077	21,891
21	26	21	Colombia.....	16,590	19,525	19,887
23	25	22	Philippines.....	14,809	15,645	18,545
24	30	23	Sweden.....	20,906	17,654	18,230
18	29	24	Spain.....	10,243	12,803	15,416
29	33	25	Trinidad and Tobago.....	12,971	18,398	14,817
26	27	26	Hong Kong.....	21,665	19,604	14,283
17	24	27	Chile.....	6,575	8,225	13,278
37	36	28	Puerto Rico.....	11,172	13,109	12,711
28	32	29	Cuba.....	13,038	31,104	10,878
25	19	30				
Totals, 30 Leading Countries.....				5,049,004	5,468,706	5,958,133
Grand Totals, Domestic Exports.....				5,255,575	5,754,986	6,178,523
Imports						
			United States.....	3,686,625	3,863,968	4,299,539
1	1	1	Britain.....	588,932	618,221	563,062
2	2	2	Venezuela.....	195,189	216,640	224,275
3	3	3	Germany, Federal Republic.....	126,988	136,530	141,199
4	4	4	Japan.....	110,382	116,607	125,359
5	5	5	France.....	50,121	54,280	56,160
6	6	6	Italy.....	42,843	49,140	51,859
7	7	7	Belgium and Luxembourg.....	41,401	44,780	48,682
8	8	8	Australia.....	35,508	36,649	45,216
11	11	9	India.....	29,352	33,465	43,473
15	13	10	Saudi Arabia.....	37,402	41,393	40,551
10	9	11	Jamaica.....	37,688	38,511	39,721
9	10	12	Netherlands.....	31,456	33,493	37,041
13	12	13	Netherlands Antilles.....	32,521	31,137	35,851
12	14	14	Iran.....	30,740	21,622	31,731
14	20	15	Brazil.....	24,883	29,081	31,601
17	15	16	Switzerland.....	24,343	26,102	28,041
18	16	17	Malaya and Singapore.....	28,120	23,597	27,741
16	18	18	Sweden.....	20,409	24,221	25,871
21	17	19	Mexico.....	21,007	18,193	24,441
20	22	20	British Guiana.....	18,921	23,030	23,371
22	19	21	Hong Kong.....	15,534	14,143	18,881
24	25	22	Republic of South Africa.....	11,482	12,202	16,951
27	27	23	Norway.....	4,248	8,965	16,101
41	30	24	Colombia.....	12,784	13,023	15,651
26	26	25	Ceylon.....	15,556	16,516	14,761
23	23	26	Trinidad and Tobago.....	14,512	14,375	14,101
25	24	27	Denmark.....	9,962	11,650	13,211
30	28	28	New Zealand.....	10,099	10,546	12,001
29	29	29	Kuwait.....	22,303	20,225	10,001
19	21	30				
Totals, 30 Leading Countries.....				5,331,309	5,602,305	6,076,611
Grand Totals, Imports.....				5,482,695	5,768,578	6,257,811

5.—Value of Domestic Exports, by Geographic Region and Country, 1955-62

Region and Country	1955	1956	1957	1958	1959	1960	1961*	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe—								
Britain.....	767,642	811,113	720,898	771,576	785,802	915,290	909,344	909,041
Gibraltar.....	282	239	272	214	182	200	291	149
Ireland.....	12,757	10,106	8,379	8,690	8,156	7,706	11,588	10,329
Malta and Gozo.....	3,926	4,056	2,743	1,506	2,142	2,299	2,924	2,217
Austria.....	5,943	4,920	6,441	7,457	8,260	7,745	7,877	7,316
Belgium and Luxembourg.....	53,314	57,789	60,194	69,531	56,127	69,131	76,055	68,169
Denmark.....	3,109	3,467	3,487	4,859	5,449	4,978	4,813	6,087
Finland.....	1,707	1,931	909	2,312	2,739	4,355	6,085	6,240
France.....	42,134	52,710	57,030	44,688	43,157	72,907	71,923	57,561
Germany, Federal Republic.....	90,526	133,847	151,508	201,134	129,345	165,597	188,694	177,688
Greece.....	4,153	2,402	4,022	4,576	3,798	5,546	4,995	9,235
Iceland.....	504	284	268	310	279	243	219	287
Italy.....	27,423	37,559	62,685	29,718	31,717	68,393	67,688	74,521
Netherlands.....	47,500	54,371	69,553	74,721	53,849	62,554	61,297	76,940
Norway.....	46,931	57,609	55,491	55,849	62,308	61,595	69,744	69,054
Portugal.....	2,813	1,894	2,788	2,553	3,251	3,336	4,718	2,563
Spain.....	4,139	5,013	5,875	6,675	6,168	10,243	12,803	15,416
Sweden.....	7,587	7,793	11,964	10,866	14,879	20,906	17,654	18,230
Switzerland.....	25,493	33,294	24,894	29,243	25,728	26,404	22,422	23,891
Totals, Commonwealth and Preferential Countries.....	784,606	825,515	732,292	781,986	796,281	925,496	924,147	921,736
Totals, Other Countries.....	363,276	454,884	517,109	544,492	447,055	583,932	616,986	612,198
Totals, Western Europe..	1,147,882	1,280,399	1,249,401	1,326,478	1,243,336	1,509,428	1,541,133	1,533,934
Eastern Europe—								
Albania.....	—	—	1	1	1	1	5,845	3,053
Bulgaria.....	—	102	116	70	200	491	277	388
Czechoslovakia.....	1,044	24,540	1,401	1,342	4,937	6,767	32,654	3,522
Germany, Eastern.....	2,261	1,458	25	1	1	994	17,972	148
Hungary.....	164	1,907	289	384	1,115	931	564	350
Poland.....	3,989	17,903	16,632	560	15,631	16,665	36,819	37,391
Romania.....	396	123	429	1,171	1,157	1,326	1,037	514
Union of Soviet Socialist Republics.....	2,658	24,528	10,646	18,863	12,638	8,233	24,276	3,297
Yugoslavia.....	348	206	189	198	2,577	3,249	2,135	999
Totals, Eastern Europe..	10,860	70,766	29,727	22,587	38,255	38,658	121,579	49,662
Middle East—								
Bahrain.....	2	2	2	2	2	112	111	210
Cyprus.....	2	2	2	2	2	609	70	298
Kuwait.....	2	2	2	2	2	1,091	941	1,040
Qatar.....	2	2	2	2	2	55	72	213
British Middle East, <i>n.e.s.</i>	16	8	1	1	7	61	165	159
Ethiopia.....	55	101	117	77	73	220	120	105
Iran.....	634	782	1,700	1,648	2,242	2,499	4,457	5,293
Iraq.....	1,167	654	1,069	969	4,311	2,425	1,374	1,343
Israel.....	4,457	2,648	4,889	4,501	4,557	6,184	8,747	6,232
Jordan.....	11	35	56	73	72	131	308	145
Lebanon.....	1,178	1,162	924	2,073	3,182	3,443	2,484	2,244
Libya.....	73	95	180	156	382	333	151	376
Saudi Arabia.....	1,236	1,940	1,656	2,017	2,877	2,905	2,697	3,257
Somalia.....	1	6	6	—	193	2	12	3
Sudan.....	4	65	212	182	367	335	333	180
Syria.....	1,043	716	798	765	1,067	674	364	561
Turkey.....	630	822	450	1,400	693	2,014	1,943	978
United Arab Republic—Egypt.....	1,261	2,499	1,197	1,077	1,601	2,010	3,025	2,230
Totals, Commonwealth and Preferential Countries.....	16	8	1	1	7	1,927	1,360	1,920
Totals, Other Countries.....	11,750	11,525	13,254	14,938	21,617	23,176	26,013	22,945
Totals, Middle East.....	11,766	11,533	13,254	14,939	21,624	25,103	27,373	24,866

* Less than \$500.
prior to 1960.

* Included with Saudi Arabia prior to 1960.

* Included with Malta and Gozo

5.—Value of Domestic Exports, by Geographic Region and Country, 1955-62—continued

Region and Country	1955	1956	1957	1958	1959	1960	1961 ¹	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Africa—								
Ghana.....	1,451	1,479	1,244	1,272	3,784	3,879	7,798	8,400
Kenya.....	523	383	743	472	806	936	586	680
Mauritius and Dependencies.....	—	108	145	107	68	77	95	94
Nigeria.....	852	723	1,492	308	938	2,305	3,272	6,997
Republic of South Africa.....	55,920	64,565	48,322	49,960	51,243	52,655	37,819	37,525
Rhodesia and Nyasaland.....	4,282	4,640	4,925	3,894	2,851	4,088	3,396	3,367
Sierra Leone.....	598	614	490	501	725	641	810	1,200
Tanganyika.....	1	1	1	1	1	143	173	228
Uganda.....	1	1	1	1	1	86	66	137
British Africa, <i>n.e.s.</i>	109	99	36	15	57	200	156	161
Algeria.....	2	2	2	2	2	4,662	6,064	2,202
Angola.....	3	3	3	3	3	67	160	44
Congo.....	3,526	2,774	2,614	2,926	2,689	1,310	980	889
French Equatorial Africa.....	2	2	2	2	2	34	57	98
French West Africa.....	2	2	2	2	2	135	73	880
French Africa, <i>n.e.s.</i>	1,221	1,060	844	1,008	2,765	10	26	9
Gabon.....	2	2	2	2	2	2	19	61
Guinea.....	2	2	2	2	2	9	140	131
Ivory Coast.....	2	2	2	2	2	2	26	10
Liberia.....	2,454	1,781	1,551	652	217	644	501	816
Morocco.....	1,786	2,027	725	1,152	416	627	476	459
Mozambique.....	2,041	2,185	2,128	1,326	2,012	3,145	2,023	2,504
Portuguese Africa, <i>n.e.s.</i>	264	167	210	320	305	279	241	197
Spanish Africa.....	2	2	15	2	2	28	40	118
Tunisia.....	2	2	2	2	2	170	561	30
Totals, Commonwealth and Preferential Countries.....	63,734	72,610	57,397	56,529	60,473	65,010	54,172	58,790
Totals, Other Countries.....	11,294	10,008	8,086	7,386	8,406	11,121	11,385	8,449
Totals, Other Africa.....	75,028	82,619	65,482	63,915	68,878	76,130	65,558	67,239
Other Asia—								
Ceylon.....	2,652	3,325	3,205	5,459	4,931	2,479	3,790	2,007
Hong Kong.....	7,237	7,005	7,503	6,028	11,192	21,665	19,604	14,283
India.....	24,573	25,614	28,902	78,994	53,654	36,814	42,885	29,633
Malaya and Singapore.....	3,405	3,889	3,288	3,223	3,258	4,660	5,696	5,453
Pakistan.....	6,109	10,376	11,308	15,311	17,317	11,942	15,315	10,755
British East Indies, <i>n.e.s.</i>	52	127	185	112	95	360	457	435
Afghanistan.....	19	14	87	24	67	159	55	25
Burma.....	479	285	239	944	817	806	1,405	1,303
Cambodia and Laos.....	4	4	4	4	4	148	114	2
China, Communist.....	1,016	2,427	1,390	7,809	1,720	8,737	125,448	147,438
Indonesia.....	931	1,201	1,590	1,665	1,780	2,110	2,463	2,027
Japan.....	90,817	127,804	139,082	104,853	139,724	178,859	231,574	214,535
Korea.....	6,977	2,594	6,970	3,682	6,000	3,916	2,067	1,492
Philippines.....	18,115	18,036	17,516	14,077	14,863	14,809	15,645	18,545
Portuguese Asia.....	174	454	461	341	358	93	59	22
Portuguese India.....	5	5	5	5	5	385	445	5
Taiwan (Republic of China).....	1,221	747	1,641	1,161	1,692	2,886	2,219	4,387
Thailand.....	2,336	1,933	2,041	1,288	1,937	2,710	2,921	3,472
Viet Nam.....	327	534	996	249	385	540	206	298
Totals, Commonwealth and Preferential Countries.....	44,028	50,335	54,452	109,127	90,447	77,920	87,755	62,566
Totals, Other Countries.....	122,413	156,030	172,011	136,095	169,324	216,159	384,622	393,546
Totals, Other Asia.....	166,441	206,366	226,463	245,222	259,771	294,079	472,376	456,112
Oceania—								
Australia.....	58,291	47,582	48,662	52,562	53,929	98,862	78,628	104,965
Fiji.....	1,055	1,121	578	814	727	808	607	705
New Zealand.....	22,248	17,896	16,842	15,008	13,306	23,858	31,125	28,784
British Oceania, <i>n.e.s.</i>	84	118	113	98	65	324	191	206
French and Netherlands Oceania.....	475	479	386	271	171	313	303	366

¹ Included with Kenya prior to 1960.
with Portuguese Africa, *n.e.s.* prior to 1960.
Portuguese Asia prior to 1960.

² Included with French Africa, *n.e.s.* prior to 1961.
⁴ Included with Viet Nam prior to 1960.
⁵ Included with India.

³ Included
⁶ Included with

5.—Value of Domestic Exports, by Geographic Region and Country, 1955-62—concluded

Region and Country	1955	1956	1957	1958	1959	1960	1961*	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Oceania—concluded								
United States Oceania.....	333	212	208	138	167	640	1,293	3,084
Totals, Commonwealth and Preferential Countries.....	81,678	66,717	66,195	68,483	68,027	123,852	110,551	132,750
Totals, Other Countries.....	808	691	594	409	338	953	1,596	3,451
Totals, Oceania.....	82,486	67,408	66,789	68,892	68,365	124,805	112,147	136,201
South America—								
British Guiana.....	2,908	4,298	4,969	4,014	4,392	7,428	5,272	5,102
Falkland Islands.....	274	11	3	53	216	169	24	13
Argentina.....	6,794	6,130	14,158	6,428	7,002	19,364	30,893	22,546
Bolivia.....	1,065	1,480	934	414	324	323	353	363
Brazil.....	11,377	12,945	25,686	21,088	14,148	19,755	30,076	28,481
Chile.....	3,804	4,394	4,342	4,566	6,226	6,575	8,225	13,278
Colombia.....	22,641	17,552	14,587	13,813	17,668	16,590	19,525	19,887
Ecuador.....	4,950	4,336	2,782	3,185	3,864	3,913	3,922	3,777
French Guiana.....	2	1	5	2	2	2	15	5
Paraguay.....	90	237	171	183	114	120	69	41
Peru.....	5,956	11,265	10,031	11,441	11,632	8,891	8,188	8,140
Surinam.....	971	1,025	829	853	696	883	1,224	866
Uruguay.....	2,341	2,752	3,777	938	1,656	2,423	3,039	3,151
Venezuela.....	30,672	34,203	39,661	43,480	45,833	35,345	34,978	42,328
Totals, Commonwealth and Preferential Countries.....	3,182	4,309	4,971	4,067	4,608	7,597	5,296	5,115
Totals, Other Countries.....	90,663	96,318	116,963	106,392	109,166	114,184	140,507	142,863
Totals, South America.....	93,845	100,627	121,935	110,459	113,773	121,780	145,803	147,978
Central America and Antilles—								
Bahamas.....	2,086	2,218	2,487	2,541	3,083	3,357	3,798	5,010
Barbados.....	4,217	4,684	4,628	4,159	4,103	3,775	3,977	4,481
Bermuda.....	2,933	2,801	2,907	3,195	4,334	4,016	4,239	4,492
British Honduras.....	303	243	276	229	289	409	600	835
Jamaica.....	12,767	17,063	19,247	15,588	18,538	18,056	19,077	21,891
Leeward and Windward Islands..	4,130	4,270	4,297	4,248	4,437	4,720	4,828	5,642
Trinidad and Tobago.....	12,585	12,456	11,763	11,548	12,636	12,971	13,398	14,817
Costa Rica.....	3,572	2,731	2,360	2,879	2,633	2,983	2,931	3,473
Cuba.....	13,883	15,284	16,846	17,549	15,222	13,038	31,104	10,878
Dominican Republic.....	4,153	4,965	4,991	5,335	5,137	5,062	4,469	8,488
El Salvador.....	1,793	2,293	2,412	2,146	2,567	2,390	2,436	3,354
French West Indies.....	21	16	37	26	19	43	75	63
Guatemala.....	2,507	2,997	3,190	3,645	2,627	2,106	2,188	2,705
Haiti.....	2,406	2,898	2,191	2,079	1,819	1,529	1,543	1,277
Honduras.....	580	856	1,055	1,201	946	1,416	1,061	899
Mexico.....	37,087	39,303	42,477	31,429	27,633	38,023	38,529	41,267
Netherlands Antilles.....	1,434	1,332	1,312	1,583	1,193	1,131	1,239	1,793
Nicaragua.....	1,759	1,396	1,534	1,886	1,615	1,319	1,448	2,135
Panama.....	2,815	7,742	30,657	5,370	4,023	3,703	4,578	5,645
Puerto Rico.....	9,700	10,396	12,589	12,526	10,522	11,172	13,109	12,711
United States Virgin Islands.....	190	130	126	132	185	214	190	283
Totals, Commonwealth and Preferential Countries.....	39,021	43,735	45,605	41,507	47,421	47,304	54,917	57,167
Totals, Other Countries.....	81,902	92,329	121,779	87,786	75,540	84,127	104,900	94,961
Totals, Central America and Antilles.....	120,923	136,064	167,384	129,294	122,961	131,431	159,818	152,129
North America—								
Greenland.....	86	176	76	138	154	427	198	167
St. Pierre and Miquelon.....	1,373	1,399	1,722	1,444	1,403	1,563	1,825	1,799
United States ²	2,547,636	2,803,085	2,846,646	2,808,067	3,083,151	2,932,171	3,107,176	3,608,433
Totals, North America.....	2,549,096	2,804,660	2,848,445	2,809,650	3,084,708	2,934,162	3,109,199	3,610,404
Grand Totals, Commonwealth and Preferential Countries..	1,016,265	1,063,230	960,914	1,061,701	1,067,263	1,249,104	1,238,198	1,240,045
Grand Totals, Other Countries	3,242,063	3,697,212	3,827,966	3,729,735	3,954,409	4,096,470	4,516,788	4,938,479
Grand Totals, All Countries...	4,258,328	4,760,442	4,788,880	4,791,436	5,021,672	5,255,575	5,754,986	6,178,523

¹ Less than \$500.

* Includes Alaska and Hawaii.

6.—Value of Imports, by Geographic Region and Country, 1955-62

Region and Country	1955	1956	1957	1958	1959	1960	1961 ^a	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe—								
Britain.....	393,117	476,371	507,320	518,505	588,573	588,932	618,221	563,062
Gibraltar.....	1	—	—	1	1	2	1	—
Ireland.....	324	371	1,122	1,313	2,001	2,098	3,806	4,826
Malta and Gozo.....	43	39	64	62	174	22	25	36
Austria.....	2,547	3,724	4,239	4,640	5,707	6,605	6,636	7,971
Belgium and Luxembourg.....	28,854	52,379	43,681	35,759	44,786	41,401	44,780	48,682
Denmark.....	4,075	5,858	7,939	7,401	9,227	9,962	11,650	13,278
Finland.....	343	500	402	475	875	1,053	1,215	1,939
France.....	24,364	31,719	34,987	40,007	56,940	50,121	54,280	56,160
Germany, Federal Republic.....	52,215	84,430	92,527	102,644	123,905	126,988	136,530	141,199
Greece.....	265	242	399	316	310	538	545	1,094
Iceland.....	5	2	40	7	40	15	707	1,183
Italy.....	18,307	24,644	32,536	32,150	37,656	42,843	49,140	51,859
Netherlands.....	19,073	21,524	21,690	26,905	29,154	31,456	33,493	37,049
Norway.....	2,290	3,698	2,984	3,106	4,063	4,248	8,965	16,109
Portugal.....	2,130	2,404	2,750	3,045	3,116	3,208	4,917	5,998
Spain.....	6,184	5,651	5,541	6,681	5,627	6,947	8,543	8,463
Sweden.....	11,996	17,135	15,339	13,939	18,077	20,409	24,221	25,873
Switzerland.....	18,965	21,925	24,053	26,491	24,514	24,343	26,102	28,040
Totals, Commonwealth and Preferential Countries.....	393,485	476,781	508,505	519,881	590,748	591,054	622,053	567,924
Totals, Other Countries.....	191,613	275,836	289,106	303,566	363,996	370,138	411,722	444,899
Totals, Western Europe....	585,098	752,617	797,611	823,446	954,744	961,191	1,033,775	1,012,823
Eastern Europe—								
Albania.....	—	—	—	—	—	1	—	—
Bulgaria.....	3	4	1	4	6	6	24	34
Czechoslovakia.....	2,861	5,649	5,013	4,908	6,440	6,654	8,405	9,083
Germany, Eastern.....	572	779	707	948	901	877	970	881
Hungary.....	116	189	168	701	237	338	393	417
Poland.....	579	2,169	1,050	1,131	1,643	1,871	3,194	4,790
Romania.....	—	2	1	4	35	84	261	61
Union of Soviet Socialist Republics.....	619	1,001	2,789	1,676	2,278	3,210	2,746	1,777
Yugoslavia.....	509	900	564	813	551	804	1,665	1,801
Totals, Eastern Europe....	5,259	10,683	10,292	10,185	12,090	13,844	17,659	18,793
Middle East—								
Bahrain.....	2	2	2	2	2	—	1	—
Cyprus.....	2	2	2	2	2	180	194	151
Kuwait.....	2	2	2	2	2	22,303	20,225	10,030
Qatar.....	—	—	—	—	—	8,434	8,724	6,270
British Middle East, n.e.s.....	47	73	51	62	400	59	48	61
Ethiopia.....	88	120	61	18	44	43	4	4
Iran.....	2,061	1,056	535	915	11,948	30,740	21,622	31,730
Iraq.....	1,298	919	429	1,556	1,107	722	846	70
Israel.....	1,132	1,463	1,548	1,725	2,349	2,372	3,106	5,640
Jordan.....	2	1	4	—	1	1	3	5
Lebanon.....	17,915	19,590	6	12	4	33	23	5
Libya.....	—	—	1	1	—	—	1	—
Saudi Arabia.....	6,983	24,709	34,315	68,021	70,725	37,402	41,393	40,580
Somalia.....	—	—	—	1	1	—	1	—
Sudan.....	97	97	45	80	438	83	76	10
Syria.....	1,058	1,350	238	200	183	127	263	45
Turkey.....	740	686	823	491	886	855	859	1,470
United Arab Republic—Egypt....	266	145	229	179	200	846	474	30
Totals, Commonwealth and Preferential Countries.....	47	73	51	62	400	30,975	29,192	16,510
Totals, Other Countries.....	31,639	50,137	38,232	73,198	87,857	73,224	68,668	81,000
Totals, Middle East.....	31,686	50,210	38,284	73,261	88,256	104,200	97,861	97,510

¹ Less than \$500.
prior to 1960.² Included with Saudi Arabia prior to 1960.³ Included with Malta and Go

6.—Value of Imports, by Geographic Region and Country, 1955-62—continued

Region and Country	1955	1956	1957	1958	1959	1960	1961 ^a	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Africa—								
Ghana.....	3,773	4,062	5,989	2,122	4,103	3,127	4,691	7,036
Kenya.....	13,146	7,270	4,970	5,057	4,261	2,561	3,629	3,157
Mauritius and Dependencies.....	—	7,758	10,278	5,918	7,584	2,100	5,600	5,215
Nigeria.....	858	985	2,352	2,372	3,084	4,358	3,504	5,726
Republic of South Africa.....	6,152	8,321	6,777	7,914	6,564	11,482	12,202	16,952
Rhodesia and Nyasaland.....	469	715	1,080	1,373	966	981	1,318	3,272
Sierra Leone.....	8	18	9	2	1	5	8	22
Tanganyika.....	1	1	1	1	1	1,834	2,139	2,173
Uganda.....	1	1	1	1	1	1,277	2,325	2,173
British Africa, <i>n.e.s.</i>	—	—	2	2	2	5	53	7
Algeria.....	3	3	3	3	3	161	162	509
Angola.....	4	4	4	4	4	209	136	122
Congo.....	2,673	2,744	3,337	1,125	2,258	1,781	1,314	1,320
French Equatorial Africa.....	3	3	3	3	3	185	27	1
French West Africa.....	3	3	3	3	3	270	2	23
French Africa, <i>n.e.s.</i>	3,280	2,095	2,225	1,749	2,183	33	29	17
Gabon.....	3	3	3	3	3	3	656	1,123
Guinea.....	3	3	3	3	3	3	4,824	896
Ivory Coast.....	3	3	3	3	3	2,794	788	244
Liberia.....	214	440	7	147	39	8	144	40
Morocco.....	182	152	138	130	209	222	164	487
Mozambique.....	128	370	39	24	18	1	30	139
Portuguese Africa, <i>n.e.s.</i>	44	94	33	11	—	—	—	2
Spanish Africa.....	41	24	20	7	8	2	17	23
Tunisia.....	3	3	3	3	3	62	32	17
Totals, Commonwealth and Preferential Countries.....	24,405	29,130	31,456	24,759	26,563	27,729	35,469	45,772
Totals, Other Countries.....	6,562	5,920	5,799	3,195	4,715	5,728	8,327	4,962
Totals, Other Africa.....	30,967	35,050	37,254	27,954	31,278	33,456	43,796	50,734
Other Asia—								
Ceylon.....	15,573	16,540	14,910	12,863	15,133	15,556	16,516	14,763
Hong Kong.....	5,821	5,642	7,138	8,689	12,969	15,534	14,143	18,889
India.....	35,105	30,852	29,185	27,655	29,221	29,352	33,465	43,479
Malaya and Singapore.....	28,790	28,544	27,313	19,863	28,644	28,120	23,597	27,740
Pakistan.....	810	1,297	489	460	1,061	985	2,367	2,561
British East Indies, <i>n.e.s.</i>	71	122	120	129	390	261	297	511
Afghanistan.....	4	—	—	—	—	—	2	—
Burma.....	5	1	9	84	24	85	30	50
Cambodia and Laos.....	5	5	5	5	5	17	2	—
China, Communist.....	3,114	5,713	5,299	5,370	4,840	5,633	3,233	4,521
Indonesia.....	998	1,141	951	211	147	529	290	173
Japan.....	36,586	60,729	61,396	70,092	102,669	110,352	116,607	125,359
Korea.....	461	1	34	21	235	404	76	99
Philippines.....	2,027	2,451	3,957	2,177	1,440	1,966	1,517	1,447
Portuguese Asia.....	—	—	—	1	1	—	—	77
Taiwan (Republic of China).....	155	112	189	159	716	1,150	1,856	2,910
Thailand.....	1,100	1,062	609	643	649	842	582	1,031
Viet Nam.....	170	12	5	3	8	5	9	7
Totals, Commonwealth and Preferential Countries.....	86,170	82,997	79,155	69,659	87,418	89,807	90,384	107,943
Totals, Other Countries.....	44,620	71,223	72,448	78,762	110,728	121,020	124,202	135,673
Totals, Other Asia.....	130,790	154,220	151,603	148,422	198,146	210,827	214,586	243,616
Oceania—								
Australia.....	26,161	26,207	28,572	32,755	41,080	35,508	36,649	45,216
Fiji.....	5,016	6,267	7,216	5,727	4,764	6,481	2,512	3,144
New Zealand.....	12,282	12,265	11,707	11,540	8,594	10,099	10,546	12,005
British Oceania, <i>n.e.s.</i>	—	142	—	160	157	—	2	—
French and Netherlands Oceania.....	—	—	19	2	1	—	40	—

¹ Included with Kenya prior to 1960.² Less than \$500.³ Included with French Africa, *n.e.s.*⁴ Included with Portuguese Africa, *n.e.s.* prior to 1960.⁵ Included with Viet Nam

6.—Value of Imports, by Geographic Region and Country, 1955-62—concluded

Region and Country	1955	1956	1957	1958	1959	1960	1961 ^r	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Oceania—concluded								
United States Oceania.....	—	1	—	—	1	21	55	214
Totals, Commonwealth and Preferential Countries.....	43,459	44,880	47,495	50,182	54,595	52,087	49,706	60,365
Totals, Other Countries.....	—	1	19	1	1	21	96	214
Totals, Oceania.....	43,459	44,880	47,514	50,182	54,597	52,109	49,802	60,578
South America—								
British Guiana.....	18,282	20,482	20,988	20,627	18,033	18,921	23,030	23,375
Falkland Islands.....	—	—	—	—	1	8	8	—
Argentina.....	4,380	4,525	4,679	5,357	3,380	3,611	3,399	5,649
Bolivia.....	15	87	139	132	166	443	883	957
Brazil.....	30,692	34,807	35,276	27,419	28,479	24,883	29,081	31,600
Chile.....	248	1,701	1,597	823	870	747	1,217	1,117
Colombia.....	22,214	23,037	18,179	16,574	15,827	12,784	13,023	15,658
Ecuador.....	5,187	4,496	4,427	4,962	7,623	11,018	7,682	8,611
French Guiana.....	—	—	—	1	—	—	—	—
Paraguay.....	237	142	278	347	746	760	874	378
Peru.....	835	2,754	2,768	2,326	3,978	3,037	4,233	3,225
Surinam.....	3,642	3,925	3,899	2,270	2,872	4,156	3,482	4,067
Uruguay.....	481	1,156	808	820	657	987	1,834	793
Venezuela.....	187,226	208,346	248,069	209,538	204,582	195,189	216,640	224,275
Totals, Commonwealth and Preferential Countries.....	18,282	20,482	20,988	20,627	18,034	18,929	23,038	23,375
Totals, Other Countries.....	255,158	284,975	320,119	270,568	269,180	257,615	282,349	296,329
Totals, South America.....	273,439	305,458	341,106	291,194	287,213	276,544	305,387	319,703
Central America and Antilles—								
Bahamas.....	263	197	145	146	233	2,614	484	217
Barbados.....	8,221	4,610	7,602	3,735	4,709	2,417	4,080	3,170
Bermuda.....	114	118	116	276	1,291	701	224	136
British Honduras.....	157	137	182	136	92	91	701	629
Jamaica.....	15,516	24,572	40,133	27,491	31,012	37,688	38,511	39,721
Leeward and Windward Islands.....	2,453	2,191	2,387	1,761	1,989	1,496	1,261	1,686
Trinidad and Tobago.....	9,811	11,012	8,159	9,807	12,731	14,512	14,375	14,100
Costa Rica.....	5,927	3,890	8,602	7,127	4,810	4,345	4,227	6,259
Cuba.....	9,989	12,257	13,840	18,836	12,011	7,243	5,034	2,803
Dominican Republic.....	1,522	1,845	1,268	2,659	1,634	1,586	1,269	1,912
El Salvador.....	2,962	1,133	1,311	1,186	3,899	829	1,307	1,848
French West Indies.....	157	—	—	—	7	28	426	328
Guatemala.....	4,544	3,224	3,469	3,585	2,718	3,256	2,536	1,796
Haiti.....	1,593	1,679	1,491	1,073	1,053	982	810	566
Honduras.....	1,666	7,079	4,575	4,903	2,905	3,352	7,391	7,617
Mexico.....	28,734	41,592	20,987	31,888	34,201	21,007	18,193	24,44
Netherlands Antilles.....	30,699	38,103	39,259	39,453	47,120	32,521	31,137	35,856
Nicaragua.....	1,429	647	555	2,657	306	170	208	107
Panama.....	9,028	7,580	7,193	7,478	8,889	6,066	6,168	8,32
Puerto Rico.....	1,089	1,048	969	1,433	1,780	2,904	2,359	2,717
United States Virgin Islands.....	—	—	1	44	32	32	1	—
Totals, Commonwealth and Preferential Countries.....	36,535	42,836	58,723	43,352	52,057	59,518	60,535	59,65
Totals, Other Countries.....	99,339	119,578	103,520	122,323	121,365	84,322	81,067	94,56
Totals, Central America and Antilles.....	135,874	162,414	162,244	165,675	173,422	143,839	141,603	154,22
North America—								
Greenland.....	1	1	1	8	53	1	102	11
St. Pierre and Miquelon.....	38	25	47	19	27	60	42	11
United States ^s	3,331,143	4,031,394	3,887,391	3,460,147	3,709,065	3,686,625	3,863,968	4,299,53
Totals, North America.....	3,331,181	4,031,419	3,887,437	3,460,174	3,709,145	3,686,685	3,864,111	4,299,76
Grand Totals, Commonwealth and Preferential Countries..	602,382	697,179	746,373	728,521	829,814	870,099	910,377	881,54
Grand Totals, Other Countries	3,965,372	4,849,772	4,726,973	4,321,971	4,679,107	4,612,597	4,858,201	5,376,24
Grand Totals, All Countries..	4,567,754	5,546,951	5,473,346	5,050,492	5,508,921	5,482,695	5,768,578	6,267,8

^r Less than \$500.^s Includes Alaska and Hawaii.

The proportion of imports subject to duty varies widely between countries and geographic areas. Generally, the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average *ad valorem* rates of duty charged on their goods than is the case with countries supplying chiefly natural products. Variations in the proportion of imports dutiable as between different countries or in the average *ad valorem* rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries.

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1960-62

Region and Country	1960*			1961*			1962		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe	507,478	453,714	961,191	532,526	501,249	1,033,775	620,704	392,119	1,012,823
Britain.....	206,346	382,586	588,932	201,574	416,647	618,221	264,132	298,930	563,062
Austria.....	6,253	352	6,605	6,242	393	6,636	7,243	729	7,971
Belgium and Luxembourg.....	30,272	11,129	41,401	34,434	10,346	44,780	36,735	11,947	48,682
Denmark.....	7,303	2,658	9,962	8,344	3,306	11,650	9,241	4,038	13,278
France.....	40,764	9,358	50,121	43,116	11,164	54,280	44,806	11,353	56,160
Germany, Federal Republic.....	108,818	18,170	126,988	115,632	20,898	136,530	120,197	21,003	141,199
Italy.....	36,882	5,961	42,843	42,632	6,509	49,140	46,227	5,632	51,859
Netherlands.....	24,180	7,276	31,456	25,557	7,936	33,493	27,336	9,713	37,049
Norway.....	2,757	1,491	4,248	3,340	5,625	8,965	5,002	11,107	16,109
Spain.....	2,916	4,031	6,947	3,613	4,930	8,543	5,149	3,314	8,463
Sweden.....	15,930	4,479	20,409	19,309	4,911	24,221	20,159	5,714	25,873
Switzerland.....	20,537	3,806	24,343	21,179	4,923	26,102	22,635	5,406	28,040
Eastern Europe	11,432	2,412	13,844	14,658	3,001	17,659	16,162	2,631	18,793
Czechoslovakia.....	6,453	201	6,654	7,929	477	8,405	8,419	614	9,033
Poland.....	1,806	65	1,871	2,745	450	3,194	4,387	402	4,790
Middle East	2,065	102,135	104,200	2,495	95,365	97,861	4,178	93,391	97,569
Kuwait.....	138	22,165	22,303	251	19,974	20,225	—	10,034	10,034
Qatar.....	—	8,434	8,434	—	8,724	8,724	—	6,273	6,273
Iran.....	149	30,591	30,740	156	21,465	21,622	128	31,608	31,736
Israel.....	652	1,719	2,372	1,144	1,962	3,106	2,930	2,716	5,646
Saudi Arabia.....	—	37,402	37,402	—	41,393	41,393	—	40,551	40,551
Other Africa	11,723	21,733	33,456	16,247	27,549	43,796	20,163	30,571	50,734
Ghana.....	2,113	1,014	3,127	3,206	1,485	4,691	3,020	4,017	7,036
Nigeria.....	2,333	2,025	4,358	998	2,506	3,504	2,444	3,282	5,726
Republic of South Africa.....	3,500	7,981	11,482	4,332	7,870	12,202	6,632	10,320	16,952
Other Asia	130,018	80,809	210,827	133,538	81,048	214,586	156,724	86,892	243,616
Ceylon.....	725	14,831	15,556	513	16,003	16,516	611	14,152	14,763
Hong Kong.....	14,957	577	15,534	13,625	518	14,143	18,327	563	18,890
India.....	7,126	22,225	29,352	7,429	26,035	33,465	16,483	26,996	43,479
Malaya and Singapore.....	1,393	26,727	28,120	1,570	22,027	23,597	1,507	26,233	27,740
China, Communist.....	1,382	4,256	5,638	1,131	2,102	3,233	1,599	2,922	4,521
Japan.....	102,016	8,366	110,382	106,714	9,894	116,607	114,035	11,324	125,359
Oceania	29,790	22,318	52,109	27,782	22,019	49,802	39,335	21,243	60,578
Australia.....	18,804	16,704	35,508	20,379	16,269	36,648	30,769	14,447	45,216
Fiji.....	6,475	6	6,481	2,506	5	2,511	3,132	12	3,144
New Zealand.....	4,490	5,609	10,099	4,842	5,704	10,546	5,221	6,781	12,005
South America	69,834	206,710	276,544	75,605	229,781	305,387	68,754	250,948	319,703
British Guiana.....	8,667	10,254	18,921	9,835	13,194	23,030	7,637	15,738	23,375
Brazil.....	17,792	7,091	24,883	19,547	9,534	29,081	20,330	11,269	31,600
Colombia.....	8,928	3,856	12,784	9,643	3,380	13,023	11,356	4,303	15,658
Ecuador.....	10,942	76	11,018	7,631	51	7,682	8,424	188	8,611
Venezuela.....	19,879	175,310	195,189	23,960	192,680	216,640	18,347	207,928	226,275

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1960-62—concluded

Region and Country	1960 [*]			1961 [*]			1962		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Central America and Antilles.....	90,133	53,706	143,839	88,648	52,955	141,603	95,462	58,765	154,227
Jamaica.....	9,888	27,800	37,688	9,758	28,754	38,511	9,244	30,476	39,721
Trinidad and Tobago..	7,298	7,213	14,512	7,199	7,175	14,375	5,519	8,581	14,100
Costa Rica.....	4,179	166	4,345	4,090	137	4,227	6,206	54	6,259
Honduras.....	3,082	270	3,352	7,233	158	7,391	7,488	129	7,617
Mexico.....	8,006	13,001	21,007	7,233	10,960	18,193	9,097	15,347	24,444
Netherlands Antilles..	32,413	108	32,521	30,642	495	31,137	35,720	136	35,856
Panama.....	5,988	78	6,066	6,150	18	6,168	8,290	31	8,321
North America.....	2,196,110	1,490,575	3,686,685	2,223,908	1,640,203	3,864,111	2,458,448	1,841,321	4,299,769
United States.....	2,196,092	1,490,534	3,686,625	2,223,783	1,640,185	3,863,968	2,458,327	1,841,212	4,299,539
Totals, Commonwealth and Pref- erential Countries	303,658	566,441	870,099	302,239	608,138	910,377	389,007	492,556	881,563
Totals, Other Countries.....	2,744,926	1,867,671	4,612,597	2,813,169	2,045,032	4,858,201	3,090,923	2,285,327	5,376,251
Grand Totals, Imports.....	3,048,583	2,434,112	5,482,695	3,115,408	2,653,170	5,768,578	3,479,930	2,777,884	6,257,814

Section 4.—Trade by Commodity

The tables in this Section provide detailed information on the composition of Canada's exports and imports, with commodities shown by sections or groups and individually.

8.—Exports classified by Section and Imports classified by Group, 1961 and 1962

NOTE.—For explanation of classifications, see p. 912.

Section	Domestic Exports		Re-exports	
	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000
All Countries.....	5,754,986	6,178,523	140,229	169,190
Live animals.....	66,901	68,054	78	18
Food, feed, beverages and tobacco.....	1,197,803	1,172,135	5,194	5,811
Crude materials, inedible.....	1,195,442	1,361,695	8,963	8,928
Fabricated materials, inedible.....	2,777,345	2,907,126	21,775	36,011
End products, inedible.....	505,591	654,763	99,978	113,566
Special transactions—trade.....	11,903	14,849	4,240	4,671
Britain.....	909,344	909,041	11,869	10,991
Live animals.....	184	105	1	1
Food, feed, beverages and tobacco.....	238,240	270,282	164	44
Crude materials, inedible.....	204,539	172,050	673	28
Fabricated materials, inedible.....	440,073	435,774	1,044	1,051
End products, inedible.....	26,069	30,624	9,676	9,082
Special transactions—trade.....	240	205	312	2
United States.....	3,107,176	3,608,439	107,342	136,222
Live animals.....	61,060	64,422	73	1
Food, feed, beverages and tobacco.....	298,121	305,780	4,226	4,431
Crude materials, inedible.....	694,914	884,041	7,554	7,301
Fabricated materials, inedible.....	1,760,533	1,968,046	18,433	32,221
End products, inedible.....	283,707	375,905	73,225	87,616
Special transactions—trade.....	8,841	10,243	3,831	4,301

^{*} Less than \$500.

8.—Exports classified by Section and Imports classified by Group, 1961 and 1962—concluded

Group	Imports	
	1961	1962
	\$'000	\$'000
All Countries	5,768,578	6,257,814
Agricultural and vegetable products	702,025	754,454
Animals and animal products	152,350	155,635
Fibres, textiles and textile products	458,488	481,952
Wood, wood products and paper	285,947	302,132
Iron and its products	2,024,327	2,262,673
Non-ferrous metals and their products	514,347	599,037
Non-metallic minerals and their products	681,002	710,949
Chemicals and allied products	371,196	395,276
Miscellaneous commodities	578,894	595,704
Britain	618,221	563,062
Agricultural and vegetable products	39,743	38,205
Animals and animal products	13,890	14,230
Fibres, textiles and textile products	85,640	90,442
Wood, wood products and paper	10,208	10,791
Iron and its products	257,625	225,761
Non-ferrous metals and their products	67,902	70,649
Non-metallic minerals and their products	31,123	32,444
Chemicals and allied products	29,040	35,391
Miscellaneous commodities	82,450	45,150
United States	3,863,968	4,299,539
Agricultural and vegetable products	387,308	422,413
Animals and animal products	93,256	85,808
Fibres, textiles and textile products	232,532	231,952
Wood, wood products and paper	242,001	252,279
Iron and its products	1,591,720	1,841,323
Non-ferrous metals and their products	328,569	395,324
Non-metallic minerals and their products	264,109	273,288
Chemicals and allied products	306,174	320,668
Miscellaneous commodities	418,299	476,485

9.—Leading Domestic Exports, 1959-62

NOTE.—Commodities are arranged in order of value in 1962.

Commodity	1959	1960	1961	1962	Percentage Change 1961 to 1962
	\$'000	\$'000	\$'000	\$'000	
Newsprint paper	722,271	757,930	761,813	753,060	- 1.1
Wheat	441,830	410,453	663,191	601,518	- 9.3
Lumber and timber	323,717	346,300	354,866	396,747	+11.8
Wood pulp	311,253	325,122	346,661	369,902	+ 6.7
Nickel and products	226,857	251,248	341,934	322,485	- 5.7
Aluminum and products	232,426	269,420	250,727	293,007	+16.9
Petroleum, crude and partly refined	74,541	94,450	152,334	232,497	+52.6
Iron ore and concentrates	157,814	155,472	135,835	220,522	+62.3
Copper and products	166,067	223,916	201,803	210,854	+ 4.5
Radioactive ores and concentrates	311,904	263,541	192,722	166,009	-13.9
Aircraft and parts	50,229	50,172	80,126	146,917	+83.4
Asbestos, unmanufactured	110,431	120,113	131,533	135,638	+ 3.1
Machinery (non-farm) and parts	48,403	67,074	96,694	122,528	+26.7
Whisky	78,262	79,220	80,397	84,885	+ 5.6
Synthetic rubber and plastics materials, not shaped	1				
Arm implements and machinery (except tractors) and parts	110,205	81,279	76,028	82,973	+ 9.1
Fish, fresh and frozen	66,523	68,833	72,528	78,288	+ 7.9
Chemicals, organic and inorganic	2	2	65,072	72,966	+12.1
Electrical apparatus, n.e.s.	32,571	47,282	55,817	72,484	+29.9
As exported by pipeline	16,953	18,051	41,689	72,423	+73.7
Inc and products	55,465	63,672	58,950	61,323	+ 4.0
Fertilizers and fertilizer materials	49,390	52,801	53,554	60,250	+12.5
Heat flow	64,903	62,239	61,076	57,043	- 6.6
Wattle, chiefly for beef	40,404	26,573	48,034	52,456	+ 9.2

¹ Not comparable with data for 1960-62.² Not comparable with data for 1961 and 1962.

9.—Leading Domestic Exports, 1959-62—concluded

Commodity	1959	1960	1961	1962	Percentage Change 1961 to 1962
	\$'000	\$'000	\$'000	\$'000	
Plates, sheet and strip.....	38,587	52,226	35,795	48,800	+36.3
Pigs, ingots, blooms and billets.....	32,622	53,349	52,232	45,878	-12.2
Plywoods and veneers.....	32,351	32,717	34,212	44,211	+29.2
Flaxseed.....	41,226	47,283	46,269	41,920	-9.4
Pulpwood.....	29,737	31,186	33,811	35,732	+5.7
Tobacco, unmanufactured.....	25,140	25,327	27,617	34,624	+25.4
Barley.....	66,310	51,441	48,966	29,927	-38.9
Meats, fresh and frozen.....	30,127	26,600	29,168	28,059	-3.8
Abrasives, artificial, crude.....	27,737	31,736	27,657	27,596	-0.2
Molluscs and crustaceans.....	21,231	23,268	24,852	27,458	+10.5
Lead and products.....	25,531	26,140	27,830	26,525	-4.7
Platinum metals, unmanufactured.....	12,554	16,105	26,746	25,735	-3.8
Fur skins, undressed.....	24,128	23,161	23,949	25,546	+6.7
Shingles and shakes.....	21,406	20,968	20,779	24,172	+16.3
Fish, cured.....	21,791	22,153	20,678	21,346	+3.2
Automobiles, passenger.....	16,316	24,261	16,748	21,233	+26.8

10.—Leading Imports, 1959-62

NOTE.—Commodities are arranged in order of value in 1962.

Commodity	1959	1960	1961	1962	Percentage Change 1961 to 1962
	\$'000	\$'000	\$'000	\$'000	
Machinery (non-farm) and parts.....	585,235	579,801	611,320	676,077	+10.6
Automobile parts (except engines).....	288,596	296,571	304,487	392,687	+29.0
Electrical apparatus, <i>n.e.s.</i>	269,402	265,260	257,239	325,316	+26.5
Petroleum, crude and partly refined.....	277,495	280,071	291,170	304,898	+4.7
Aircraft and parts.....	114,025	167,009	312,552	259,251	-17.1
Automobiles, passenger.....	199,601	220,144	157,003	153,679	-2.1
Tractors and parts.....	172,069	131,541	136,014	140,287	+3.1
Plastics and products.....	90,092	97,650	105,417	119,708	+13.6
Farm implements and machinery (except tractors) and parts.....	101,752	97,118	95,680	113,451	+18.6
Engines, internal combustion, and parts, <i>n.e.s.</i>	87,446	81,594	80,040	113,208	+41.4
Parcels of small value.....	54,514	53,764	55,094	85,504	+55.2
Apparel and apparel accessories.....	71,573	72,019	75,962	71,728	-5.6
Cotton fabrics.....	70,058	75,150	75,896	71,208	-6.2
Coal, bituminous.....	65,115	61,821	58,777	62,461	+6.3
Paper and products, <i>n.e.s.</i>	47,420	49,009	53,949	59,202	+9.7
Fuel oils.....	77,903	66,853	59,789	59,142	-1.1
Plates, sheet and strip.....	59,667	56,667	53,275	57,898	+8.7
Sugar, unrefined.....	56,810	50,677	52,729	56,926	+8.0
Iron ore.....	27,129	48,370	47,433	56,324	+18.7
Coffee, green.....	50,326	47,314	52,184	55,655	+6.7
Bauxite and alumina for aluminum.....	31,345	39,529	52,775	55,625	+5.2
Vegetables, fresh.....	43,285	49,326	47,826	55,455	+16.0
Cotton, raw.....	43,079	43,367	47,313	54,333	+14.8
Books, printed.....	39,458	43,391	48,794	53,042	+8.7
Pipes, tubes and fittings.....	55,305	48,405	46,092	49,458	+7.3
Medical, optical and dental goods, <i>n.e.s.</i>	34,706	37,133	41,201	45,775	+11.1
Principal chemicals (except acids), <i>n.e.s.</i>	42,617	43,934	43,770	45,698	+4.4
Newspapers, magazines and advertising matter.....	38,092	39,224	43,937	45,449	+3.4
Logs, timber and lumber.....	44,955	39,603	39,804	44,760	+12.5
Rubber, crude and semi-fabricated.....	52,063	42,587	35,007	44,087	+25.9
Tools.....	36,517	34,279	37,911	43,608	+15.0
Indian corn.....	14,730	17,609	27,403	43,503	+58.8
Medicinal and pharmaceutical products.....	32,824	32,947	41,349	39,006	-4.9
Wool fabrics.....	35,658	35,327	36,339	38,010	+4.6
Soybeans.....	28,058	32,204	30,261	37,340	+23.4
Citrus fruits, fresh.....	35,316	36,528	36,839	36,989	+0.4
Glass, cut, pressed or blown.....	24,772	25,366	31,608	35,268	+11.6
Synthetic fabrics.....	27,927	27,455	29,326	34,374	+17.2
Canadian goods returned.....	10,387	24,191	30,116	34,167	+13.5
Cooking and heating apparatus and parts.....	39,426	33,101	31,424	32,038	+2.0

Detailed Exports and Imports.—Detailed statistics of all commodities of any importance exported from Canada to all countries, to Britain and to the United States during the years 1961 and 1962 are given in Table 11; corresponding statistics for imports into Canada appear in Table 12. An explanation of the different classifications used in these tables is given on p. 912.

11.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962

Section and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Live Animals	66,901	68,054	184	105	61,060	64,422
Food, Feed, Beverages and Tobacco	1,197,803	1,172,135	238,240	270,282	298,121	305,780
Meat, fresh, chilled or frozen.....	29,168	28,059	1,699	1,601	25,940	24,565
Meat, other and meat preparations.....	13,730	14,722	44	159	7,373	7,422
Fish, fresh, chilled or frozen.....	72,528	78,288	3,007	2,208	67,974	73,688
Fish, preserved except canned.....	20,678	21,346	19	3	5,332	5,875
Fish, canned.....	17,453	19,276	7,829	9,300	1,477	1,487
Shellfish.....	24,852	27,458	438	620	23,575	25,707
Dairy products, eggs and honey.....	26,088	23,311	6,431	8,960	1,561	884
Barley.....	48,966	29,927	4,775	11,895	15,418	4,851
Wheat.....	663,191	601,518	140,533	140,134	15,115	12,913
Cereals, unmilled, other.....	10,235	17,701	263	1,983	3,708	4,806
Wheat flour.....	61,076	57,043	22,238	22,781	1,865	1,979
Cereals, milled, other.....	11,886	12,866	2	10	6,508	7,703
Cereal preparations.....	5,063	6,227	659	401	3,913	5,250
Fruits and fruit preparations.....	13,226	17,691	4,880	8,090	6,570	7,470
Vegetables and vegetable preparations.....	15,810	23,998	3,558	7,416	6,550	6,262
Sugar and sugar preparations.....	7,735	8,057	268	742	7,022	6,249
Foods, other and materials for food preparations.....	11,573	15,342	2,917	4,001	3,179	5,784
Oil seed cake and meal.....	11,419	19,064	10,971	18,318	235	131
Feeds of vegetable origin, other.....	10,750	12,977	723	2,205	9,166	9,589
Animal feeds, other.....	9,539	12,938	1,736	2,433	5,054	7,396
Whisky.....	80,397	84,885	251	305	76,124	80,639
Beverages, other.....	4,414	4,259	14	12	4,221	4,118
Tobacco.....	28,025	35,182	24,986	26,707	240	1,009
Crude Materials, Inedible	1,195,442	1,361,595	204,539	173,050	694,914	884,041
Raw hides and skins.....	16,536	14,781	1,566	887	4,047	4,335
Fur skins, undressed.....	23,949	25,546	5,013	4,696	17,315	18,172
Crude animal products, other.....	4,057	6,004	274	550	3,455	5,060
Seeds for sowing.....	9,451	11,734	995	1,693	7,214	8,665
Flaxseed.....	46,269	41,920	21,421	16,760	1	6
Rapeseed.....	13,850	20,667	301	180	29	72
Oil seeds, other and oil nuts and kernels.....	10,636	10,648	7,674	7,500	1,693	1,898
Crude vegetable materials, other.....	13,227	13,856	210	145	12,394	13,272
Pulpwood.....	33,811	35,732	2,843	2,401	24,550	24,346
Crude wood materials, other.....	18,836	19,030	1,447	1,014	13,664	14,241
Textile and related fibres.....	10,106	11,718	1,215	668	4,402	3,869
Iron ores and concentrates.....	142,566	220,522	20,227	14,892	96,709	178,687
Scrap iron and steel.....	27,338	12,489	96	—	7,830	6,159
Aluminum ores, concentrates and scrap.....	10,634	9,331	307	59	1,992	2,279
Copper in ores, concentrates and scrap.....	26,524	48,287	1,175	962	7,297	10,976
Lead in ores, concentrates and scrap.....	9,404	8,070	21	519	4,963	4,185
Nickel in ores, concentrates and scrap.....	151,379	132,308	83,564	70,081	15,052	10,453
Precious metals in ores concentrates and scrap.....	37,296	34,996	25,209	22,846	9,393	9,581
Zinc in ores, concentrates and scrap.....	16,707	19,782	953	542	10,849	16,484
Radioactive ores and concentrates.....	192,722	166,009	18,256	16,598	173,914	149,165
Metal-bearing ores, concentrates and scrap, other.....	3,727	7,789	353	217	603	3,259
Petroleum, crude.....	152,334	232,497	—	—	152,334	232,497
Natural gas.....	41,689	72,423	—	—	41,689	72,423
Coal and other crude bituminous substances.....	8,979	9,311	1	1	2,676	3,307
Asbestos unmanufactured.....	131,341	135,638	9,450	7,994	50,562	57,449
Crude materials, inedible, other.....	42,074	40,506	1,967	847	29,912	33,203
abricated Materials, Inedible	2,777,345	2,907,126	440,073	435,774	1,760,533	1,968,046
Leather and leather fabricated materials.....	10,959	11,281	4,063	3,053	4,412	5,211
Lumber, softwood.....	334,512	371,410	47,202	46,499	248,485	284,285

¹ Less than \$500.

11.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962—continued

Section and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Fabricated Materials, Inedible—concl.						
Lumber, hardwood.....	20,354	25,337	2,694	2,721	17,298	22,159
Shingles and shakes.....	20,779	24,172	236	170	20,362	23,836
Sawmill products, other.....	4,517	4,547	1,234	758	3,265	3,764
Veneer.....	18,154	20,913	32	7	17,928	20,095
Plywood.....	16,037	23,298	11,549	16,452	4,071	5,935
Wood fabricated materials, other.....	6,524	5,825	2,601	1,177	3,145	3,797
Wood pulp and similar pulp.....	346,661	369,902	31,023	27,723	268,949	298,166
Newsprint paper.....	761,313	753,060	59,294	63,452	629,792	633,037
Paper for printing, other.....	8,737	8,769	420	561	6,689	6,716
Paperboard.....	12,159	14,914	10,533	12,663	688	1,661
Paper, other.....	17,348	20,450	5,733	8,403	4,450	5,147
Yarn, thread, cord, twine, rope.....	8,797	7,899	159	493	4,205	4,123
Broad woven and other fabrics.....	14,906	14,613	7,662	6,244	883	634
Oils, fats, waxes, extracts and derivatives	15,759	14,539	10,168	6,414	1,595	1,483
Chemical elements.....	7,470	6,855	2,199	1,497	3,525	3,927
Inorganic chemicals, other.....	19,643	21,153	2,989	3,245	12,124	14,491
Organic chemicals.....	37,959	44,957	8,270	8,321	22,647	27,236
Fertilizers and fertilizer materials.....	53,554	60,250	7	3	49,659	57,283
Synthetic and reclaimed rubber and plastic materials.....	103,832	84,571	19,599	15,380	7,688	10,078
Plastics, basic shapes and forms.....	7,448	8,503	2,698	1,713	426	454
Chemical products, other.....	7,667	9,923	485	1,094	3,088	5,098
Petroleum products and coal products...	14,286	19,386	420	517	12,094	16,844
Ferro alloys.....	5,339	5,856	3,641	3,392	1,032	1,924
Primary iron and steel.....	52,232	45,878	4,083	4,674	31,077	35,598
Castings and forgings.....	8,516	15,384	41	156	7,680	14,267
Bars and rods of steel.....	11,848	9,448	3,567	1,756	2,928	3,694
Plate, sheet and strip of steel.....	35,795	48,800	3,132	5,430	9,782	14,785
Railway track material.....	8,137	12,660	—	—	1,278	4,351
Iron and steel fabricated materials, other	9,005	11,599	402	157	5,984	9,511
Aluminum, including alloys.....	241,825	284,551	72,415	82,443	62,268	102,014
Copper and alloys.....	178,320	163,931	69,096	59,710	45,562	56,087
Lead, including alloys.....	18,330	18,269	5,818	5,975	9,761	10,059
Nickel and alloys.....	191,647	191,556	20,203	15,587	140,391	163,403
Precious metals, including alloys.....	10,535	12,582	191	196	9,996	12,072
Zinc, including alloys.....	42,244	41,541	16,687	16,928	15,690	17,471
Non-ferrous metals and alloys, other.....	13,188	12,579	5,487	5,453	6,735	5,028
Metal fabricated basic products.....	14,329	17,041	1,065	1,151	8,439	25,129
Abrasive basic products.....	29,404	30,091	2,351	3,310	25,403	10,983
Non-metallic basic products, other.....	13,703	13,982	138	206	10,651	16,508
Electricity.....	15,794	16,508	—	—	15,794	3,113
Fabricated materials, other.....	7,777	8,327	486	690	2,615	375,905
End Products, Inedible.....	505,591	654,763	26,069	30,624	283,707	375,905
General purpose industrial machinery...	16,995	22,731	1,238	1,081	6,918	8,589
Drilling, excavating, mining machinery...	6,997	8,743	266	284	2,082	2,290
Special industry machinery.....	32,045	43,357	2,977	3,046	16,827	21,399
Machinery and equipment, other.....	9,256	10,187	670	1,071	5,750	5,235
Soil preparation, seeding, fertilizing machinery.....	17,486	20,594	27	71	15,915	19,455
Haying, harvesting and related machinery.....	53,531	55,727	253	1,227	49,367	50,770
Agricultural machinery and equipment, other.....	5,252	6,833	57	33	4,757	6,319
Tractors.....	9,278	8,824	34	239	5,926	6,148
Railway and street railway rolling stock.	6,989	5,902	8	12	1,905	1,048
Passenger automobiles.....	—	21,233	—	487	—	322
Road motor vehicles, other.....	46,513	35,844	996	354	11,805	14,644
Ships and boats.....	13,580	19,319	914	793	2,401	8,633
Aircraft.....	100,914	146,917	3,217	2,815	76,030	106,993
Vehicles, other.....	957	1,086	1	—	953	1,046
Rubber tires and tubes.....	5,140	7,630	75	8	2,474	4,440
Communication and related equipment.	35,514	51,789	392	1,171	26,163	39,171
Heating, air conditioning and refrigeration equipment.....	5,152	5,877	1,473	2,123	1,004	1,633
Cooking equipment for food.....	1,634	2,713	928	1,323	324	914
Electric lighting, distribution and control equipment.....	14,531	16,280	602	1,215	3,741	5,422
Measuring, controlling, laboratory, medical and optical equipment.....	14,976	32,235	333	522	6,894	16,388

¹ Less than \$500.

11.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1961 and 1962—concluded

Section and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
End Products, Inedible—concl.						
Hand tools and miscellaneous cutlery....	5,402	5,543	807	986	219	256
Office machines and equipment.....	27,740	33,589	1,540	1,807	5,476	8,038
Equipment and tools, other.....	8,038	9,687	828	828	3,577	4,793
Apparel and apparel accessories.....	7,240	9,757	2,770	2,553	2,478	3,645
Footwear.....	3,738	5,652	838	992	2,063	3,446
Toys, games, sporting and recreation equipment.....	6,006	8,057	317	478	4,629	6,065
Personal and household goods, other.....	8,307	8,598	1,052	840	3,992	3,826
Medicinal and pharmaceutical products.....	9,029	10,274	241	236	852	830
Medical supplies, ophthalmic and orthopaedic appliances.....	1,061	1,263	34	75	364	544
Printed matter.....	5,630	6,940	499	450	4,014	5,083
Photographic goods.....	3,934	4,498	258	329	1,529	2,034
Firearms, ammunition, weapons and fire control equipment.....	5,872	10,239	850	450	4,279	9,146
Containers and closures.....	3,976	5,262	708	1,489	1,487	2,064
End products, other.....	12,876	12,083	928	1,235	7,414	5,253
Special Transactions—Trade	11,903	14,849	240	205	8,841	10,243
Contractors' equipment and tools.....	4,785	8,330	82	42	3,091	5,082
Shipments under \$50 in value.....	6,995	6,437	157	163	5,675	5,088
Special transactions—trade, other.....	123	83	1	1	75	73
Totals, Exports.....	5,754,986	6,178,523	909,344	909,041	3,107,176	3,608,439

12.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962

Group and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Agricultural and Vegetable Products (except chemicals, fibres and wood)	703,304	754,749	39,749	38,184	388,187	422,750
Fruits and berries, fresh or chilled.....	97,971	99,493	—	15	64,738	65,264
Other fruits and fruit preparations.....	72,638	71,834	31	1,365	51,150	48,911
Nuts, kernels and seeds for food.....	12,882	13,425	1,326	161	4,232	4,755
Vegetables, fresh or chilled.....	47,827	55,455	180	2	44,093	51,247
Other vegetables and vegetable preparations.....	16,660	14,638	11	194	12,028	9,758
Cereals, unmilled.....	38,949	52,478	218	47	35,318	51,705
Cereals, milled.....	1,764	2,044	61	2	1,618	1,894
Cereal preparations.....	10,292	7,887	5	3,661	4,995	3,286
Sugar, raw.....	52,729	50,926	4,293	—	—	—
Other sugar and sugar preparations.....	19,806	17,510	—	5,833	5,709	4,620
Cocoa and chocolate.....	16,604	18,647	6,961	3,398	1,861	1,592
Coffee, green.....	52,184	55,655	4,106	6	4,241	5,881
Other coffee and coffee preparations.....	7,144	6,525	77	27	7,009	6,412
Spices, spice herbs and spice seeds.....	3,462	3,487	38	324	820	741
Tea.....	23,995	22,571	317	3,576	303	298
Other vegetable food products.....	7,036	5,319	3,719	569	6,086	4,413
Animal feeds.....	13,517	20,521	623	—	13,393	20,520
Beverages.....	24,797	26,730	10,404	11,184	1,146	1,302
Gums and resins.....	9,064	9,065	98	137	8,009	8,192
Oils, vegetable.....	34,952	32,707	3,278	3,441	17,461	14,948
Plants, shrubs, trees, vines, roots.....	8,203	8,210	18	14	5,136	5,008
Rubber, raw and partially manufactured.....	34,226	43,290	370	426	18,027	23,248
Rubber tires and tubes.....	2,083	10,056	115	703	1,818	7,169
Other rubber, manufactured.....	32,147	27,425	2,355	1,978	26,437	23,746
Seeds for sowing.....	7,740	7,651	520	515	6,000	5,728
Oil seeds, nuts and kernels.....	38,748	48,211	36	12	33,739	39,222
Tobacco.....	6,483	7,523	340	397	4,560	4,651
Other vegetable non-food products.....	9,401	9,466	247	199	8,260	8,238

12.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962—continued

Group and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Animals and Animal Products (except chemicals and fibres)	152,350	156,054	13,890	14,251	93,256	86,165
Live animals.....	6,967	7,561	142	516	6,445	6,689
Fish and fishery products.....	17,760	19,156	419	455	8,381	7,574
Furs and products.....	23,155	23,141	4,597	4,605	14,121	12,240
Hides and skins, raw.....	11,475	11,202	41	9	11,097	9,832
Leather, unmanufactured.....	10,394	11,489	5,459	5,774	3,871	4,239
Leather, manufactured.....	2,149	2,208	431	433	1,348	1,328
Meat, fresh, chilled or frozen.....	24,848	27,723	—	12	14,543	14,488
Other meat and meat preparations.....	22,725	18,107	336	248	15,212	11,699
Dairy produce, eggs and honey.....	12,886	12,353	119	119	6,063	5,181
Oils, fats, greases and waxes.....	7,310	7,602	270	175	6,056	5,716
Other animals products.....	12,680	15,513	2,045	1,904	6,118	7,179
Fibres, Textiles and Textile Products	458,488	451,952	85,640	90,442	232,532	231,952
Cotton, raw and linters.....	48,998	56,395	16	8	47,418	50,192
Cotton fabrics.....	77,207	72,861	3,317	3,236	52,616	47,880
Other cotton products.....	21,914	23,066	3,863	3,795	12,954	11,462
Flax, hemp, jute and products.....	26,360	30,938	4,368	4,936	4,417	4,367
Silk and products.....	7,861	7,156	170	151	3,928	3,570
Wool, raw and unmanufactured.....	29,282	31,780	17,069	18,884	2,948	2,574
Wool fabrics.....	36,339	38,010	26,136	26,865	1,715	2,193
Other wool products.....	7,380	10,434	4,670	6,395	853	1,090
Synthetic fibre fabrics.....	29,326	34,374	1,107	1,355	22,518	25,425
Synthetic fibres and other synthetic fibre products.....	23,968	30,561	1,828	3,053	18,783	22,889
Carpets, mats, other floor coverings.....	12,465	11,252	2,910	2,710	2,921	2,367
Apparel and apparel accessories.....	75,962	71,728	12,469	11,564	24,947	20,158
Other textile products.....	61,926	63,398	7,715	7,490	36,515	37,783
Wood, Wood Products and Paper	274,408	291,475	9,991	10,575	233,850	245,020
Lumber and timber.....	30,806	31,236	13	33	27,984	27,720
Other wood, unmanufactured.....	27,727	35,017	132	301	19,457	22,887
Wood, manufactured.....	28,607	28,128	629	494	21,392	21,116
Pulpboard and other fibreboard.....	21,433	20,838	209	196	19,575	19,143
Other paper.....	54,284	59,541	2,539	2,604	48,852	53,081
Newspapers and magazines.....	35,087	37,290	308	300	33,729	35,287
Books and pamphlets.....	48,976	53,224	4,720	5,383	37,989	42,154
Other printed matter.....	27,488	26,200	1,441	1,263	24,873	23,633
Iron and Its Products	1,922,308	2,196,628	203,727	206,104	1,543,362	1,795,265
Iron ore.....	47,433	56,324	—	—	45,679	54,665
Pigs, ingots, blooms and billets.....	1,641	2,459	108	166	1,506	1,757
Ferro-alloys.....	8,099	8,978	334	196	3,855	3,946
Scrap iron.....	11,743	12,619	2	2	11,734	12,617
Castings and forgings.....	7,925	10,416	768	619	6,850	9,457
Bars and rods.....	19,843	25,457	2,054	2,360	6,310	5,643
Plates, sheet and strip.....	53,275	57,898	6,082	5,068	40,422	46,267
Other rolling mill products.....	38,791	28,131	4,108	3,565	24,434	16,925
Pipes, tubes and fittings.....	46,092	49,458	9,247	9,743	27,975	29,573
Wire and wire products.....	18,960	21,321	6,626	6,546	6,622	7,212
Engines, diesel and semi-diesel and parts.....	30,281	39,145	9,610	9,479	19,318	27,620
Engines for motor vehicles and parts.....	28,499	46,727	843	1,040	26,766	33,228
Other engines (except aircraft engines).....	28,207	35,496	964	1,503	26,696	32,228
Farm equipment and parts (except tractors).....	95,680	113,451	1,773	2,070	91,417	108,666
Tractors and parts.....	136,014	140,287	16,349	17,085	118,544	121,483
Hardware and cutlery.....	26,443	35,078	3,457	3,596	16,637	24,127
Household machinery.....	28,178	28,071	2,151	2,045	22,882	22,933
Mining, metallurgical machinery.....	63,712	41,973	3,917	1,928	57,879	38,906
Business and printing machinery.....	94,482	104,882	4,197	5,922	78,068	86,223
Metalworking machinery.....	34,414	55,047	4,764	8,407	25,837	41,570
Pulp and paper mill machinery.....	12,538	9,807	4,944	1,910	6,197	7,322
Other non-farm machinery.....	369,974	436,297	27,210	32,230	321,690	379,623
Stamped and coated products.....	14,885	15,714	278	343	14,059	14,000
Tools.....	37,911	43,608	4,685	5,614	27,485	31,531
Automobiles, freight and passenger.....	183,653	178,955	64,148	54,874	71,440	78,171
Automobile parts.....	304,487	392,687	8,776	8,767	292,044	378,507
Other vehicles, chiefly of iron.....	19,980	24,297	3,965	4,660	14,729	17,763
Cooking and heating apparatus.....	31,424	32,038	703	623	30,158	30,391
Firearms and ammunition.....	8,592	19,786	1,216	4,471	5,515	13,781
Other iron products.....	119,152	130,221	10,448	11,275	100,716	108,631

12.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Group and Commodity, 1961 and 1962—concluded

Group and Commodity	All Countries		Britain		United States	
	1961	1962	1961	1962	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Non-ferrous Metals and Their Products	514,190	598,784	67,894	70,639	328,436	395,142
Aluminum ores, concentrates and scrap	58,130	62,277	4	3	9,273	12,226
Other aluminum and products	27,941	39,592	3,721	10,206	22,199	27,748
Brass and copper and products	25,565	28,953	2,435	2,603	21,510	24,137
Lead and products	654	510	119	114	246	239
Nickel and products	10,807	15,894	289	162	5,853	5,876
Precious metals and products (except gold)	39,692	40,030	12,604	17,216	23,750	17,233
Tin and products	9,278	6,262	1,677	523	1,348	526
Zinc and products	3,829	4,421	112	140	3,421	3,995
Alloys, n.o.p.	1,939	1,937	698	633	1,073	1,140
Other ores or metals, non-ferrous	12,244	11,937	40	66	3,620	3,185
Clocks and watches	11,717	13,065	1,032	1,594	2,462	2,653
Electrical apparatus, n.o.p.	265,260	325,316	36,884	31,953	199,752	260,872
Printing materials	3,191	3,470	69	53	3,076	3,344
Plumbing equipment and fittings	9,843	8,900	1,122	829	7,513	6,685
Other non-ferrous metals and products	34,098	36,221	7,088	4,545	23,340	25,283
Non-metallic Minerals and Their Products (except chemicals)	680,880	710,851	31,122	32,443	263,957	273,190
Asbestos and products	5,272	4,940	1,279	965	3,577	3,397
Clay and products	44,119	48,542	14,483	15,644	24,471	26,608
Coal	71,560	74,171	813	513	70,747	73,658
Coal products	18,399	15,454	1,708	1,780	15,957	13,627
Glass and glassware	67,074	78,720	6,058	7,497	43,264	50,426
Petroleum, crude	291,170	304,898	—	—	1,869	941
Fuel oils	60,659	60,159	233	356	10,115	8,886
Other petroleum products	41,775	41,383	92	248	33,799	34,607
Stone and products	40,547	44,640	1,680	2,035	34,023	36,223
Other non-metallic minerals and products	40,306	37,944	4,777	3,405	26,167	24,817
Chemicals, and Allied Products	370,469	394,660	29,640	35,391	305,459	320,072
Acids	8,198	8,316	1,441	1,313	5,293	4,904
Drugs, medicines, pharmaceuticals	40,972	38,896	3,960	4,260	32,445	29,366
Dyeing extracts, tanning materials	3,929	2,305	461	56	2,246	1,275
Explosives	1,440	1,973	88	363	1,086	1,399
Fertilizers and fertilizer materials	16,233	15,176	32	36	13,389	12,258
Toiletries, cleaners, household chemicals	1	12,167	1	672	1	10,368
Inorganic chemicals, n.o.p.	27,252	26,986	3,555	4,011	21,085	20,614
Plastics materials, not shaped	2	53,205	2	1,325	2	48,626
Plastic film and sheet	2	24,161	2	1,555	2	20,269
Plastics basic shapes and forms, n.o.p.	2	10,181	2	299	2	9,466
Other plastics manufactures	104,829	31,685	3,351	598	94,806	28,322
Dyestuffs	3	14,048	3	1,672	3	7,039
Pigments, lakes and toners	24,785	10,531	6,539	860	14,083	9,207
Paints and related products	1	8,040	1	361	1	7,596
Other chemicals	142,831	136,990	10,213	18,211	121,027	109,363
Miscellaneous Commodities	692,151	672,659	136,568	65,034	474,900	529,983
Films	19,442	19,081	3,000	3,126	13,678	12,716
Toys and sporting goods	20,670	20,757	2,759	2,685	10,552	9,868
Containers, other than paper	15,822	7,506	3,926	1,028	3,600	2,679
Footwear	20,953	21,625	5,436	5,295	2,438	2,049
Refrigerators	26,382	24,647	3,063	3,206	23,089	20,740
Other household and personal equipment	24,653	25,362	1,859	1,968	14,835	14,693
Musical instruments	14,541	18,173	2,502	4,533	8,565	9,913
Scientific and educational equipment	66,765	72,640	3,474	3,227	51,394	56,746
Aircraft complete with engines	4	4	4	4	4	4
Aircraft engines and parts	4	4	4	4	4	4
Aircraft parts	312,552	259,251	101,540	29,633	210,141	229,420
Ships and boats	9,266	6,792	517	562	4,705	4,957
Other vehicles	9,490	8,785	185	116	9,171	8,551
Works of art	4,473	6,358	1,184	1,497	1,776	3,026
Canadian goods returned	30,116	34,167	1,608	1,655	25,038	28,717
Shipments under \$100 in value ¹	55,094	85,504	1,929	2,820	51,433	80,182
Other miscellaneous commodities	61,962	62,012	3,586	3,683	44,484	45,727
Totals, Imports	5,768,578	6,257,814	618,221	563,662	3,863,968	4,299,539

¹ Included with "Other chemicals".

² Included with "Other plastics manufactures".

³ Included

with "Pigments, lakes and toners".

⁴ Included with "Aircraft parts".

⁵ Shipments under \$50 in

value prior to April 1962.

Section 5.—Trade by Origin and Degree of Manufacture

Tables 13 and 14 classify exports and imports, respectively, according to origin, by group and degree of manufacture for the years 1959 and 1960. These were the latest figures available for this classification at the time of going to press.

13.—Exports according to Origin, by Group and Degree of Manufacture, 1959 and 1960

Origin	1959			1960		
	All Countries	Britain	United States	All Countries	Britain	United States
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin						
CANADIAN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	658,818	234,971	74,904	621,666	221,038	71,006
Partly manufactured.....	10,944	—	5,397	10,938	—	6,234
Fully or chiefly manufactured.....	184,842	43,780	89,596	184,345	43,898	91,887
Totals, Field Crops.....	854,604	278,751	169,897	816,948	264,937	169,128
Animal Husbandry—						
Raw materials.....	111,567	3,650	89,159	92,942	4,972	68,342
Partly manufactured.....	13,914	1,671	7,493	10,817	2,005	5,432
Fully or chiefly manufactured.....	60,701	18,314	14,241	59,479	15,860	15,170
Totals, Animal Husbandry.....	186,183	23,636	110,893	163,238	22,836	88,943
All Canadian Farm Products—						
Raw materials.....	770,386	238,621	164,063	714,608	226,011	139,348
Partly manufactured.....	24,858	1,671	12,890	21,755	2,005	11,666
Fully or chiefly manufactured.....	245,543	62,094	103,837	243,823	59,758	107,057
TOTALS, CANADIAN FARM PRODUCTS.....	1,040,787	302,387	280,790	980,186	287,773	258,071
FOREIGN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	6	—	6	210	—	210
Partly manufactured.....	1,313	66	878	1,357	91	869
Fully or chiefly manufactured.....	21,606	226	12,670	22,408	3,853	8,538
Totals, Field Crops.....	22,925	292	13,554	23,976	3,945	9,617
Animal Husbandry—						
Raw materials.....	—	—	—	—	—	—
Partly manufactured.....	—	—	—	—	—	—
Fully or chiefly manufactured.....	6	—	4	9	6	3
Totals, Animal Husbandry.....	6	—	4	9	6	3
All Foreign Farm Products—						
Raw materials.....	6	—	6	210	—	210
Partly manufactured.....	1,313	66	878	1,357	91	869
Fully or chiefly manufactured.....	21,611	226	12,674	22,417	3,860	8,540
TOTALS, FOREIGN FARM PRODUCTS.....	22,931	292	13,558	23,985	3,951	9,620
ALL FARM PRODUCTS—¹						
All Field Crops—						
Raw materials.....	658,825	234,971	74,910	621,876	221,038	71,217
Partly manufactured.....	12,258	66	6,275	12,295	91	7,10
Fully or chiefly manufactured.....	206,447	44,006	102,266	206,753	47,752	100,42
Totals, All Field Crops.....	877,530	279,043	183,451	840,924	268,882	178,74

¹ In this classification the expression "Canadian Farm Products" refers to commodities actually produced in their original form, on Canadian farms. "Foreign Farm Products" covers materials or commodities Canada does not produce, e.g., cane sugar, tea, rubber, cotton, silk, etc.

13.—Exports according to Origin, by Group and Degree of Manufacture, 1959 and 1960—concluded

Origin	1959			1960		
	All Countries	Britain	United States	All Countries	Britain	United States
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin—concluded						
All Animal Husbandry—						
Raw materials.....	111,567	3,650	89,159	92,942	4,972	68,342
Partly manufactured.....	13,914	1,071	7,493	10,817	2,005	5,432
Fully or chiefly manufactured.....	60,707	18,314	14,245	59,488	15,866	15,172
Totals, All Animal Husbandry.....	186,188	23,636	110,897	163,247	22,843	88,946
All Farm Products—						
Raw materials.....	770,392	238,621	164,069	714,818	226,011	139,559
Partly manufactured.....	26,172	1,737	13,768	23,112	2,096	12,535
Fully or chiefly manufactured.....	267,154	62,320	116,511	266,241	63,618	115,597
Totals, Farm Origin.....	1,063,718	302,679	294,348	1,004,171	291,724	267,691
Wildlife Origin						
Raw materials.....	24,164	4,550	18,466	23,409	5,125	16,964
Partly manufactured.....	1,379	91	871	1,169	66	504
Fully or chiefly manufactured.....	640	15	577	386	83	268
Totals, Wildlife Origin.....	26,184	4,656	19,914	24,964	5,274	17,736
Marine Origin						
Raw materials.....	88,313	297	86,886	91,641	1,889	88,063
Partly manufactured.....	504	66	438	540	90	450
Fully or chiefly manufactured.....	58,337	21,490	11,274	45,266	9,096	10,111
Totals, Marine Origin.....	147,154	21,853	98,598	137,448	11,075	98,624
Forest Origin						
Raw materials.....	44,235	3,719	38,149	46,910	2,990	39,904
Partly manufactured.....	671,616	62,080	552,807	708,425	97,407	539,575
Fully or chiefly manufactured.....	800,199	66,732	666,804	837,028	79,137	678,602
Totals, Forest Origin.....	1,516,050	132,531	1,257,760	1,592,362	179,534	1,258,081
Mineral Origin						
Raw materials.....	778,082	97,306	588,475	765,461	114,167	539,259
Partly manufactured.....	752,830	176,604	390,002	906,108	244,076	337,418
Fully or chiefly manufactured.....	493,227	12,974	325,536	536,473	32,021	293,909
Totals, Mineral Origin.....	2,024,139	286,884	1,304,012	2,208,043	390,264	1,170,587
Mixed Origin						
Raw materials.....	1,951	—	1,951	1,914	—	1,914
Partly manufactured.....	1,400	8	578	1,282	22	675
Fully or chiefly manufactured.....	241,077	37,190	105,990	285,391	37,397	116,864
Totals, Mixed Origin.....	244,427	37,199	108,519	288,587	37,418	119,452
Recapitulation						
Raw materials.....	1,707,137	344,494	897,995	1,644,153	350,181	825,662
Partly manufactured.....	1,453,901	240,586	958,464	1,640,637	343,757	891,158
Fully or chiefly manufactured.....	1,860,634	200,721	1,226,692	1,970,785	221,352	1,215,351
Grand Totals.....	5,021,672	785,802	3,083,151	5,255,575	915,290	2,932,171

**14.—Imports according to Origin, by Group and Degree of Manufacture,
1959 and 1960**

Origin	1959			1960		
	All Countries	Britain	United States	All Countries	Britain	United States
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin						
CANADIAN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	164,907	603	128,759	155,558	396	142,209
Partly manufactured.....	15,985	59	15,383	12,131	107	11,397
Fully or chiefly manufactured.....	92,366	26,260	49,269	96,480	26,350	51,250
Totals, Field Crops.....	273,258	26,921	193,411	264,169	26,852	204,856
Animal Husbandry—						
Raw materials.....	55,735	2,925	34,901	55,444	2,553	35,023
Partly manufactured.....	33,379	20,046	7,950	30,966	18,497	7,371
Fully or chiefly manufactured.....	110,227	52,629	21,823	113,631	52,000	23,840
Totals, Animal Husbandry.....	199,341	75,601	64,674	200,041	73,050	66,233
All Canadian Farm Products—						
Raw materials.....	220,641	3,528	163,660	211,002	2,949	177,232
Partly manufactured.....	49,364	20,105	23,333	43,097	18,604	18,768
Fully or chiefly manufactured.....	202,593	78,889	71,092	210,110	78,350	75,090
TOTALS, CANADIAN FARM PRODUCTS.....	472,599	102,522	258,085	464,209	99,902	271,090
FOREIGN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	202,489	2,164	80,450	225,570	1,583	97,405
Partly manufactured.....	98,741	2,032	27,315	83,740	1,234	21,888
Fully or chiefly manufactured.....	326,721	34,187	169,963	328,586	32,898	170,569
Totals, Field Crops.....	627,951	38,383	277,729	637,895	35,716	289,861
Animal Husbandry—						
Raw materials.....	10,520	3,242	5,768	9,887	3,813	4,853
Partly manufactured.....	46	—	4	13	—	3
Fully or chiefly manufactured.....	14,279	428	9,103	16,145	651	9,827
Totals, Animal Husbandry.....	24,845	3,671	14,874	26,046	4,464	14,682
All Foreign Farm Products—						
Raw materials.....	213,009	5,406	86,218	235,457	5,397	102,257
Partly manufactured.....	98,787	2,032	27,319	83,754	1,234	21,890
Fully or chiefly manufactured.....	341,000	34,615	179,066	344,731	33,550	180,396
TOTALS, FOREIGN FARM PRODUCTS.....	652,796	42,054	292,603	663,941	40,180	304,544
ALL FARM PRODUCTS—¹						
All Field Crops—						
Raw materials.....	367,396	2,767	209,209	381,127	1,979	239,614
Partly manufactured.....	114,726	2,091	42,698	95,871	1,341	33,285
Fully or chiefly manufactured.....	419,087	60,447	219,232	425,065	59,248	221,819
Totals, All Field Crops.....	901,209	65,304	471,139	902,064	62,568	494,718
All Animal Husbandry—						
Raw materials.....	66,254	6,168	40,668	65,332	6,366	39,876
Partly manufactured.....	33,426	20,046	7,954	30,980	18,497	7,374
Fully or chiefly manufactured.....	124,506	53,058	30,926	129,775	52,651	33,667
Totals, All Animal Husbandry.....	224,186	79,271	79,549	226,087	77,515	80,916

¹ In this classification the expression "Canadian Farm Products" refers to commodities of which the basic raw materials are such as Canadian farms produce. "Foreign Farm Products" covers materials or commodities Canada does not produce, e.g., cane sugar, tea, rubber, cotton, silk, etc.

14.—Imports according to Origin, by Group and Degree of Manufacture, 1959 and 1960—concluded

Origin	1959			1960		
	All Countries	Britain	United States	All Countries	Britain	United States
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin—concluded						
All Farm Products—						
Raw materials.....	433,650	8,934	249,877	446,459	8,345	279,489
Partly manufactured.....	148,152	22,138	50,652	126,851	19,838	40,658
Fully or chiefly manufactured.....	543,593	113,504	250,158	554,841	111,899	255,486
Totals, Farm Origin.....	1,125,395	144,576	550,688	1,128,151	140,083	575,634
Wildlife Origin						
Raw materials.....	11,603	1,060	8,676	11,043	1,011	7,741
Partly manufactured.....	3,039	257	2,587	2,851	231	2,403
Fully or chiefly manufactured.....	823	38	700	953	37	765
Totals, Wildlife Origin.....	15,465	1,355	11,963	14,847	1,279	10,909
Marine Origin						
Raw materials.....	6,821	25	4,548	6,830	11	4,532
Partly manufactured.....	—	—	—	—	—	—
Fully or chiefly manufactured.....	11,022	741	4,725	11,599	650	5,372
Totals, Marine Origin.....	17,843	766	9,273	18,429	661	9,904
Forest Origin						
Raw materials.....	12,341	—	12,250	15,668	—	15,564
Partly manufactured.....	68,362	578	56,651	54,221	62	45,593
Fully or chiefly manufactured.....	196,362	7,758	171,219	202,444	9,184	172,965
Totals, Forest Origin.....	277,065	8,336	240,119	272,334	9,246	234,121
Mineral Origin						
Raw materials.....	470,103	2,350	143,143	496,828	2,040	158,089
Partly manufactured.....	85,328	11,527	61,934	86,100	15,448	56,252
Fully or chiefly manufactured.....	2,792,434	360,186	2,112,516	2,684,640	363,847	2,015,425
Totals, Mineral Origin.....	3,347,865	374,063	2,317,592	3,267,568	381,336	2,229,765
Mixed Origin						
Raw materials.....	644	—	567	729	—	693
Partly manufactured.....	6,994	343	6,086	6,911	350	5,946
Fully or chiefly manufactured.....	717,649	59,134	572,776	773,727	55,978	619,653
Totals, Mixed Origin.....	725,288	59,477	579,429	781,368	56,328	626,292
Recapitulation						
Raw materials.....	935,163	12,369	419,062	977,558	11,407	466,108
Partly manufactured.....	311,875	34,843	177,910	276,933	35,929	150,852
Fully or chiefly manufactured.....	4,261,883	541,360	3,112,093	4,228,204	541,596	3,069,665
Grand Totals.....	5,508,921	588,573	3,709,065	5,482,695	588,932	3,686,625

Section 6.—Comparison of Value, Price and Volume of Foreign Trade

In recent years there has been a substantial increase in the value of Canada's exports and imports. Changes in the value of trade, however, are the joint product of changes in the volume of goods traded and in the prices at which transactions are conducted. To assess the significance of value changes, it is desirable to isolate the contributions made to them by the price and volume factors.

Special indexes of export and import prices have been developed to provide this information. These indexes are based chiefly on unit values (average prices) calculated from the trade statistics, supplemented by information on wholesale and retail prices. Price relatives are calculated for a sample of commodities representing the greater part of export and import trade, and these relatives are weighted by the percentage of 1948 trade represented by each commodity in the sample in obtaining group and total indexes. By dividing these price indexes into the trade values the effects of price change are removed from the values, or by dividing the price index into an index of values on the same time-base an index is obtained showing changes in the volume of trade from year to year.

The grouping of commodities used in these calculations differs from that of the regular trade statistics, the changes being desirable to simplify the pricing problem. The chief differences are that the first two main groups of the trade statistics have been combined into one group, "agricultural and animal products", and that the sub-group "rubber and its products" has been transferred from this group to the "miscellaneous" group. The declared values of domestic exports and imports have been revised to cover the adjustment for "Special Transactions—Non-Trade". An explanation of that adjustment is given at p. 912. Table 15 shows the revised values of trade adjusted for pricing purposes and the value, price and volume indexes of Canadian trade for 1959-62.

15.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Group, 1959-62

Commodity Group ¹	1959	1960	1961*	1962
DECLARED VALUES				
	\$'000	\$'000	\$'000	\$'000
Domestic Exports	5,021,672	5,255,575	5,754,986	6,178,523
Agricultural and animal products.....	1,212,381	1,142,428	1,442,244	1,429,613
Fibres and textiles.....	26,803	40,518	44,661	48,193
Wood products and paper.....	1,515,962	1,591,919	1,639,343	1,718,306
Iron and steel products.....	574,453	605,960	596,514	742,075
Non-ferrous metals and products.....	1,114,784	1,213,999	1,209,545	1,234,139
Non-metallic minerals and products.....	294,235	339,569	428,586	455,508
Chemicals and fertilizers.....	201,729	237,687	248,326	248,399
Miscellaneous.....	81,324	83,495	145,766	212,291
	5,598,921	5,482,695	5,768,578	6,257,814
Imports	733,062	737,710	854,375	910,090
Agricultural and animal products.....	425,470	431,975	458,488	481,952
Fibres and textiles.....	263,203	256,701	285,947	302,132
Wood products and paper.....	2,086,064	2,046,258	2,024,327	2,262,673
Iron and steel products.....	479,231	476,633	514,347	599,087
Non-ferrous metals and products.....	698,138	660,749	681,002	710,940
Non-metallic minerals and products.....	334,455	346,972	371,196	395,276
Chemicals and fertilizers.....	489,299	525,698	578,894	595,704
Miscellaneous.....				

For footnote, see end of table.

**15.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade,
by Commodity Group, 1959-62—concluded**

Commodity Group ¹	1959	1960	1961*	1962
VALUE INDEXES (1948=100)				
Domestic Exports	164.8	172.5	188.9	202.8
Agricultural and animal products.....	116.1	109.3	137.2	135.7
Fibres and textiles.....	56.6	88.9	98.0	105.8
Wood products and paper.....	159.0	166.9	171.9	180.2
Iron and steel and products.....	158.3	167.0	166.2	206.1
Non-ferrous metals and products.....	285.6	311.0	309.9	316.2
Non-metallic minerals and products.....	310.0	357.8	451.5	574.7
Chemicals and fertilizers.....	252.7	297.7	311.0	311.1
Miscellaneous.....	110.9	113.2	198.9	295.4
Imports	210.4	209.4	220.3	239.0
Agricultural and animal products.....	182.2	183.4	195.4	206.2
Fibres and textiles.....	120.9	122.8	130.3	137.0
Wood products and paper.....	373.1	363.9	392.9	416.8
Iron and steel and products.....	266.3	261.2	257.8	287.9
Non-ferrous metals and products.....	307.2	305.6	336.0	391.0
Non-metallic minerals and products.....	115.7	109.5	111.3	116.1
Chemicals and fertilizers.....	275.7	286.1	314.0	334.8
Miscellaneous.....	377.4	405.5	501.7	525.1
PRICE INDEXES (1948=100)				
Domestic Exports	122.8	123.0	124.0	128.5
Agricultural and animal products.....	99.8	99.6	101.9	109.5
Fibres and textiles.....	107.8	110.5	111.5	114.3
Wood products and paper.....	120.2	118.5	116.0	116.6
Iron and steel and products.....	161.7	162.8	167.1	172.7
Non-ferrous metals and products.....	145.6	148.8	152.4	159.9
Non-metallic minerals and products.....	165.0	165.3	169.2	172.0
Chemicals and fertilizers.....	114.8	115.3	114.2	114.4
Miscellaneous.....	128.9	133.9	131.6	132.4
Imports	114.4	115.5	119.1	125.0
Agricultural and animal products.....	91.3	91.1	94.8	98.4
Fibres and textiles.....	82.3	85.0	89.0	93.9
Wood products and paper.....	139.7	142.2	144.8	150.7
Iron and steel and products.....	144.2	146.5	153.4	162.1
Non-ferrous metals and products.....	135.1	138.3	141.3	148.1
Non-metallic minerals and products.....	101.8	98.6	101.0	105.9
Chemicals and fertilizers.....	110.9	111.9	116.4	121.2
Miscellaneous.....	116.3	125.7	114.8	119.5
VOLUME INDEXES (1948=100)				
Domestic Exports	134.2	140.2	152.3	157.8
Agricultural and animal products.....	116.3	109.7	134.6	123.9
Fibres and textiles.....	52.5	80.5	87.9	92.6
Wood products and paper.....	132.3	140.8	148.2	154.5
Iron and steel and products.....	97.9	102.6	99.5	119.3
Non-ferrous metals and products.....	196.2	209.0	203.3	197.7
Non-metallic minerals and products.....	187.9	216.5	266.8	334.1
Chemicals and fertilizers.....	220.1	258.2	272.3	271.9
Miscellaneous.....	86.0	84.5	151.1	223.1
Imports	183.9	181.3	185.0	191.2
Agricultural and animal products.....	199.6	201.3	206.1	209.6
Fibres and textiles.....	146.9	141.6	146.4	145.9
Wood products and paper.....	267.1	255.9	271.3	276.6
Iron and steel and products.....	184.7	178.3	168.1	177.6
Non-ferrous metals and products.....	227.4	221.0	237.8	264.0
Non-metallic minerals and products.....	113.7	111.0	110.2	109.6
Chemicals and fertilizers.....	248.6	255.7	269.8	276.2
Miscellaneous.....	324.5	322.6	437.0	439.4

¹ The groups, though classified by component material, differ slightly from conventional groups (see text, p. 912).

PART III.—THE GOVERNMENT AND FOREIGN TRADE

Section 1.—Federal Foreign Trade Services*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy. It is appreciated, however, that two-way trade should be encouraged in order that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities that are not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although many private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives.

The federal Department of Trade and Commerce, the primary function of which is the promotion of external trade, makes available to businessmen a wide variety of services to assist them in selling their products abroad. These services are provided by the Department's head office in Ottawa, four regional offices in Canada, and a corps of Trade Commissioners stationed around the world.

The highlight of the 1963 trade promotion program of the Department was "Operation World Markets", a comprehensive four-stage campaign which took place from Mar. 23 to May 3. It included a program entitled World Markets Machinery, held Mar. 23 to 31, for which nearly 200 foreign businessmen and government officials were brought to Canada; a National Canadian Samples Show, held in Toronto Apr. 2 to 4, attended by more than 600 buyers from Britain, Ireland, Western Europe, the West Indies and the United States; an Export Trade Promotion Conference, held in Ottawa Apr. 16 to May 3, at which 1,143 Canadian businessmen discussed export opportunities with Trade Commissioners brought from their posts abroad; and a Trade Commissioner Conference which carried out detailed group studies and discussions on special problems encountered in trading areas abroad.

Services available from the various branches, divisions and agencies of the Department of Trade and Commerce are described below. The work of these entities is interrelated, each operating in its own field but working closely with the others to effect the over-all objective of trade promotion.

Trade Commissioner Service.—The Trade Commissioner Service is the overseas arm of the Department and is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 64 offices are maintained in 47 countries.

Every effort is made by the Trade Commissioners to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian businessmen, they study potential markets for specific Canadian commodities and services. Reports are provided on the demand in the country concerned, prices, competition, trade and exchange regulations, tariffs, shipping and packaging requirements, credit terms, channels of distribution, labelling regulations, etc. Inquiries from local businessmen for goods obtainable from Canada are forwarded to the Department in Ottawa, or directly to Canadian firms in a position to supply the products required.

* Prepared in the several branches and agencies concerned, and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa.

The supervision of Canadian exhibits at overseas trade fairs and the provision of assistance to participating Canadian firms is an important function of many offices. Trade commissioners make local arrangements for and travel with Canadian trade missions visiting overseas markets. They also seek sources of supply for a wide variety of goods on behalf of Canadian importers.

In developing trade opportunities, Canada's trade commissioners travel extensively in their territories, visit leading industrial and commercial centres, and call on government officials, businessmen, trade associations and municipal authorities in an effort to arouse interest in Canadian products. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian products, while creating connections for Canadian exporters and facilitating the collection of trade information. They return to Canada at periodic intervals and make tours of Canadian industrial and commercial centres. Such direct contacts enable them to discuss specific problems with businessmen and bring into focus the Canadian commercial scene.

In countries where Canada has a diplomatic mission, the Canadian trade office is the commercial division and the trade commissioner has the rank of Minister (Commercial), Minister-Counsellor (Economic), Commercial Counsellor or Commercial Secretary. When attached to a consulate, he carries the title of Deputy Consul General (Commercial), Consul (Commercial), or Vice-Consul (Commercial), according to his rank, in addition to that of Trade Commissioner. He may also be the Consul General, in charge of the office. Where trade offices are detached and do not form part of a diplomatic mission, the trade commissioner may also be required to undertake consular, immigration and other duties as the sole representative of Canada.

CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT SEPT. 21, 1963

ARGENTINA.—Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires. Territory includes Paraguay.

AUSTRALIA.—

Sydney: Commercial Counsellor for Canada, 21st Floor A.M.P. Bldg., Circular Quay, Sydney. Mail: P.O. Box 3952 G.P.O.

Melbourne: Commercial Counsellor for Canada, Mobile Centre, 2 City Road, South Melbourne.

Canberra: Commercial Counsellor, Office of the High Commissioner for Canada, Commonwealth Ave., Canberra.

AUSTRIA.—Commercial Counsellor for Canada, Opernringhof, Opernring 1, Vienna 1. Mail: P.O. Box 106, Vienna 1/15. Territory includes Albania, Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.

BELGIUM.—Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels 4. Territory includes Luxembourg, European Economic Community, European Atomic Energy Community and European Coal and Steel Community.

BRAZIL.—

Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Edificio Metropole, Av. Presidente Wilson 165, Rio de Janeiro. Mail: Caixa Postal 2164-ZC-00.

São Paulo: Consul and Trade Commissioner, Canadian Consulate, Edificio Alois, Rua 7 de Abril 252, São Paulo. Mail: Caixa Postal 6034.

BRITAIN.—

London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London W.1.

Liverpool: Canadian Government Trade Commissioner, Martins Bank Bldg., Water Street, Liverpool.

Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George St., Glasgow C.2, Scotland.

Belfast: Canadian Government Trade Commissioner, 15-17 Chichester St., Belfast 1, Northern Ireland.

CAMEROON.—Commercial Division, Canadian Embassy, Soppo Priso Bldg., rue Joseph Clerc, Yaounde. Mail: P.O. Box 572. Territory includes Central African Republic, Chad, Congo (Brazzaville) and Gabon.

- CEYLON.—Commercial Division, Office of the High Commissioner for Canada, 6 Gregory's Road, Cinnamon Gardens, Colombo. Mail: P.O. Box 1006.
- CHILE.—Commercial Secretary, Canadian Embassy, 5th Floor, Agustinas 1225, Santiago. Mail: Casilla 771.
- COLOMBIA.—Commercial Secretary and Consul, Canadian Embassy, Edificio Banco de Los Andes, Carrera 10, No. 16-92, Bogota. Airmail: Apartado Aereo 8582. Surface Mail: Apartado 1618. Territory includes Ecuador.
- CONGO.—Chargé d'Affaires, Canadian Embassy, C.C.C.I. Bldg., Boulevard Albert 1^{er}, Leopoldville 1. Mail: Boîte Postale 8341.
- CUBA.—Commercial Division, Canadian Embassy, Calle 30, No. 518, esquina 7a Avenida, Miramar, Havana. Mail: Gaveta 6125.
- DENMARK.—Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen V. Territory includes Greenland and Poland.
- DOMINICAN REPUBLIC.—Commercial Secretary and Vice Consul, Canadian Embassy, Edificio Copello 408, Calle El Conde, Santo Domingo. Mail: Apartado 1393. Territory includes Puerto Rico.
- FRANCE.—Commercial Counsellor, Canadian Embassy, 35 Ave. Montaigne, Paris 8^e. Territory includes Algeria and Morocco.
- GERMANY.—
Bad Godesberg: Commercial Counsellor, Canadian Embassy, Frankengrabenstrasse 35, Bad Godesberg.
Duesseldorf: Consul, Canadian Consulate, Bismarckstrasse 95, 4 Duesseldorf 1.
Hamburg: Consul General, Canadian Consulate General, Ferdinandstrasse 69, Hamburg.
- GHANA.—Commercial Counsellor, Office of the High Commissioner for Canada, E115/3 Independence Ave., Accra. Mail: P.O. Box 1639. Territory includes Guinea, Ivory Coast, Liberia, Mali, Mauritania, Togo and Upper Volta.
- GREECE.—Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens 138. Territory includes Turkey.
- GUATEMALA.—Commercial Counsellor, Canadian Embassy, 5a Avenida 11-70, Zone I, Guatemala City, C.A. Airmail P.O. Box 400. Surface mail: P.O. Box 444. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.
- HAITI.—Chargé d'Affaires *ad interim* and Consul, Canadian Embassy, Route du Canape Vert, St. Louis de Turgeau, Port-au-Prince. Mail: P.O. Box 826.
- HONG KONG.—Canadian Government Trade Commissioner, Hong Kong and Shanghai Banking Corporation Bldg., Hong Kong. Mail: P.O. Box 126. Territory includes Cambodia, Communist China, Laos, Viet Nam and Macao.
- INDIA.—
New Delhi: Commercial Counsellor for Canada, 13 Golf Links Road, New Delhi 1. Mail: P.O. Box 11. Territory includes Bhutan, Nepal and Sikkim.
Bombay: Canadian Government Trade Commissioner, Gresham Assurance House, Mint Road, Bombay 1-BR. Mail: P.O. Box 886.
- IRAN.—Commercial Division, Canadian Embassy, Bezrouke Bldg., Corner of Takht Jamshid Ave. and Forsat St., Tehran. Mail: P.O. Box 1610.
- IRELAND.—Commercial Counsellor for Canada, 66 Upper O'Connell St., Dublin.
- ISRAEL.—Commercial Secretary for Canada, 84 Hahashmonaim St., Tel Aviv. Mail: P.O. Box 20140. Territory includes Cyprus.
- ITALY.—
Rome: Commercial Counsellor, Canadian Embassy, Via G.B. De Rossi 27, Rome. Territory includes Libya and Malta.
Milan: Consul General.
- JAMAICA.—Commercial Counsellor, Office of the High Commissioner for Canada, 32 Duke St. (corner Duke and Barry Sts.), Kingston. Mail: P.O. Box 225. Territory includes Bahamas and British Honduras.

- JAPAN.**—Minister (Commercial), Canadian Embassy, 16, Omote-Machi, 3-Chome, Akasaka, Minato-ku, Tokyo. Mail: c/o Akasaka Post Office, Tokyo. Territory includes Korea and Okinawa.
- LEBANON.**—Commercial Counsellor, Canadian Embassy, Alpha Bldg., Rue Clemenceau, Beirut. Mail: Boite Postale 2300. Territory includes Iraq, Jordan, Persian Gulf Area, Saudi Arabia and Syria.
- MEXICO.**—Commercial Counsellor, Canadian Embassy, Melchor Ocampo 463, 7th Floor, Mexico 5, D.F. Mail: Apartado 25364.
- NETHERLANDS.**—Commercial Counsellor, Canadian Embassy, Sophialaan 5-7, The Hague.
- NEW ZEALAND.**—Commercial Counsellor, Office of the High Commissioner for Canada, Government Life Insurance Bldg., Wellington. Mail: P.O. Box 1660. Territory includes Fiji, Samoa, Tahiti and Tonga.
- NIGERIA.**—Commercial Secretary, Office of the High Commissioner for Canada, 4th Floor Barclays Bank Bldg., 40 Marina Road, Lagos. Mail: P.O. Box 851. Territory includes Dahomey, Gambia, Niger, Senegal and Sierra Leone.
- NORWAY.**—Commercial Secretary, Canadian Embassy, Fridtjof Nansens Plass 5, Oslo 1. Mail: P.O. Box 1379—Vika. Territory includes Iceland.
- PAKISTAN.**—Commercial Secretary, Office of the High Commissioner for Canada, Hotel Metropole, Victoria Road, Karachi. Mail: P.O. Box 3703. Territory includes Afghanistan.
- PERU.**—Commercial Secretary, Canadian Embassy, Edificio Boza, Carabaya 831, Plaza San Martin, Lima. Mail: Casilla 1212. Territory includes Bolivia.
- PHILIPPINES.**—Consul General and Trade Commissioner, Canadian Consulate General, L & S Bldg., 3rd Floor, 1414 Dewey Blvd., Manila. Mail: P.O. Box 1825. Territory includes Republic of China (Taiwan).
- PORTUGAL.**—Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4°D°, Lisbon. Territory includes Angola, Azores, Cape Verde Islands, Madeira and Portuguese Guinea.
- RHODESIA AND NYASALAND, FEDERATION OF.**—Canadian Government Trade Commissioner, 8th Floor, Grindlays Bank Chambers, Baker Ave., Salisbury. Mail: P.O. Box 2133. Territory includes Seychelles Islands and Zanzibar.
- SINGAPORE.**—Canadian Government Trade Commissioner, American International Bldg., Robinson Road and Telegraph St., Singapore. Mail: P.O. Box 845. Territory includes Brunei, Burma, Federation of Malaya, Indonesia, North Borneo, Sarawak and Thailand.
- SOUTH AFRICA.**—
Johannesburg: Canadian Government Trade Commissioner, Mobil House, 17th Floor, Corner Rissik and De Villiers Sts., Johannesburg. Mail: P.O. Box 715. Territory includes Madagascar, Mauritius, Mozambique and Reunion.
Cape Town: Trade Commissioner, 13th Floor, African Life Centre, St. George's St., Cape Town. Mail: P.O. Box 683. Territory includes St. Helena and South West Africa.
- SPAIN.**—Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Mail: Apartado 117. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Rio de Oro.
- SWEDEN.**—Commercial Counsellor, Canadian Embassy, Strandvagen, 7-C, Stockholm. Mail: P.O. Box 14042. Territory includes Finland.
- SWITZERLAND.**—Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne. Territory includes Tunisia.
- TRINIDAD AND TOBAGO.**—Commercial Counsellor, Office of the High Commissioner for Canada, Colonial Bldg., 72 South Quay, Port-of-Spain. Mail: P.O. Box 125. Territory includes Barbados, Windward and Leeward Islands, British Guiana, French Guiana, Surinam, Guadeloupe and Martinique.
- UNION OF SOVIET SOCIALIST REPUBLICS.**—Commercial Counsellor, Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow.

UNITED ARAB REPUBLIC.—Commercial Counsellor, Canadian Embassy, 6 Sharia Rouston Pasha, Garden City, Cairo. Mail: Kasr el Doubara Post Office. Territory includes Aden, Sudan, Ethiopia and Yemen.

UNITED STATES.—

Washington: Minister (Economic), Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington 36, D.C.

New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York City 19. Territory includes Bermuda.

Boston: Consul and Trade Commissioner, Canadian Consulate General, 607 Boylston St., Boston 16.

Chicago: Consul and Trade Commissioner, Canadian Consulate General, 310 South Michigan Ave., Suite 2000, Chicago 4.

Detroit: Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Bldg., Detroit 26.

Los Angeles: Consul and Trade Commissioner, Canadian Consulate General, 510 West Sixth St., Los Angeles 14.

New Orleans: Consul and Trade Commissioner, Canadian Consulate General, Suite 1710, 225 Baronne St., New Orleans 12.

Philadelphia: Consul and Trade Commissioner, Canadian Consulate, 3 Penn Center Plaza, Philadelphia 2.

San Francisco: Consul General, Canadian Consulate General, 333 Montgomery St., San Francisco 4. Territory includes Hawaii.

Seattle: Consul General, Canadian Consulate General, The Tower Bldg., Seventh Ave. at Olive Way, Seattle 1. Territory includes Alaska.

URUGUAY.—Commercial Division, Canadian Embassy, No. 1409 Avenida Agraciada, Piso 7°, Montevideo. Mail: Casilla Postal 852. Territory includes Falkland Islands.

VENEZUELA.—Commercial Counsellor, Canadian Embassy, Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Mail: Apartado 11452-Este. Territory includes Netherlands Antilles.

Trade Fairs and Missions Branch.—It is the function of this Branch, through its Trade Fairs Abroad Division and its Trade Missions Division, to organize and co-ordinate the trade fairs and missions programs sponsored by the Department. Liaison within the Department and program development are conducted through advisory committees—one on trade fairs abroad and another on trade missions. Each committee is convened and chaired by the Director of the Branch and includes representatives of all trade promotion branches of the Department.

The 1963 program of the Trade Fairs Abroad Division included exhibits in 35 trade fairs held in the United States, Britain and other European countries, Australia and Japan. At many of these exhibitions, selected Canadian companies displayed their products in individual booths within a Canadian exhibit. However, exhibits ranged in size from trade information booths manned by Departmental personnel to 'solo' fairs completely organized by the Department and involving upwards of 100 business firms. Outstanding was the solo fair held in the United States at Philadelphia, from Nov. 11 to 16, in which 103 Canadian firms participated. The 20 trade missions organized in 1963 by the Trade Missions Division included 13 teams of Canadian businessmen sent to study special markets in Europe, the United States, Latin America and the Middle East, and seven groups of business visitors brought to Canada from Argentina, Britain, Jamaica, Japan, Mexico, South Africa and Venezuela. Four missions were concerned with improving Canadian production in the furniture and machinery industries and the remainder to promoting the exports of a particular industry or commodity group. Both Divisions work in close co-operation with trade associations and other interested organizations outside the Department.

International Trade Relations Branch.—The function of the International Trade Relations Branch is to safeguard and improve terms of access for Canadian exporters in foreign markets. In the field of trade policy the Branch is concerned with the conduct

of Canadian trade relations with other countries, including the negotiation and administration of trade agreements and Canadian participation in international trade conferences such as those of the General Agreement on Tariffs and Trade. The Branch endeavours to find practical solutions for tariffs and other difficulties encountered in foreign markets by Canadian exporters and as a service to exporters provides expert information, advice and assistance on foreign tariffs, import and exchange controls, documentation requirements and other foreign governmental regulations affecting Canada's trade. The Branch also has responsibilities in relation to the export financing facilities available for the development of exports of Canadian capital equipment. Through the Area Divisions—Commonwealth, United States, European, Latin American and Asia and Middle East—the Branch is the central point of contact between Canada's Trade Commissioners abroad and the Department in Ottawa.

Trade Services Branch.—The functions of this Branch relate to transportation problems, export and import controls, trade directories, the administration of the Regional Offices and the provision of general guidance to firms seeking entry into the export field. These activities are conducted by three Divisions: the Transportation Division is concerned primarily with industrial transportation from the user's point of view, keeping in touch with developments and trends in shipping services and in freight rates; the Trade Controls Division administers the controls established under the Export and Import Permits Act; and the Allied Services Division administers the Department's Regional Offices and compiles the *Exporter's Directory*, a confidential list of firms engaged in or seriously interested in exporting commodities or services.

Commodities Branch.—The principal role of the Commodities Branch is to maintain close contact with the Canadian business community and become familiar with production and supply conditions. Emphasis is placed on the search for products and services, the sale of which can be promoted abroad. The Branch is organized into six divisions—Appliances and Commercial Machinery, Textiles and Consumer Goods, Forest Products, Chemicals, Metals and Minerals, and Engineering and Equipment. The divisions are staffed by Commodity Officers who are specialists in such fields as engineering services and plant equipment, electrical and electronic equipment, transportation and agricultural equipment, ferrous and non-ferrous metals, lumber, pulp and paper, chemicals and petroleum products, rubber and plastic, as well as a wide range of commercial and consumer products. These officers visit manufacturing plants and production facilities, attend and address meetings of business associations and study groups, prepare product reports and market surveys, provide information on trade opportunities, and advise on the export potential of products in markets abroad. In co-operation with the Canadian Government Exhibition Commission, they arrange for the display of Canadian products at trade fairs for the purpose of introducing them into new markets. They organize and accompany trade missions and also serve as delegates to international commodity conferences to study world market conditions and to consider corrective adjustments in conjunction with industry advisers.

Agriculture and Fisheries Branch.—This Branch, concerned primarily with the export of agricultural, fisheries and food products to world markets, operates through four specialized divisions—Grain, Fisheries, Livestock and Animal Products, and Plant Products. It works closely with other branches of the Department, particularly the Trade Commissioners Service and maintains liaison with food processors, agricultural producers, trade associations, provincial marketing boards and with other government departments, both federal and provincial. The Branch is particularly active in those trade fairs sponsored by the Department which exhibit agricultural, food and fisheries products.

Branch officers organize trade missions for the agricultural and fisheries processing industries and arrange for visits of foreign buyers to Canada, thus providing effective stimulation to the export of such products. As a service to these industries, surveys of foreign markets are undertaken as well as special studies relating to trade. A continuing assessment of foreign market conditions with their competitive factors is obtained from Canadian Trade Commissioners abroad, and the Branch keeps the industries fully informed of market potentials or of circumstances that appear to be detrimental to trade. In turn, the Trade Commissioners are kept informed of export possibilities of Canadian products and their competitive position.

Branch functions include participation in activities relating to international commodity agreements. The Director serves as departmental representative on the Interdepartmental FAO Committee, and the Branch provides the secretariat for the Canadian Fur Council and the Interdepartmental Fisheries Trade Committee. During 1963, delegates were provided for the International Coffee Conference, meetings of the International Sugar Council, the FAO Cocoa Study Group, and various commodity meetings under FAO and GATT. Branch officials also serve on many interdepartmental commodity committees.

Trade Publicity Branch.—The Trade Publicity Branch is responsible for the advertising, publicity and public information activities of the Department. Its function is to promote an awareness of, and interest in, Canadian products in foreign markets and to publicize the activities of all Branches, so as to further the Department's objectives both in Canada and abroad. All communications media are employed to these ends, with particular emphasis on the graphic arts. The Branch has three main divisions.

The Editorial and Art Services Division is responsible for the writing, art work, design and production of all advertising and printed matter for the Department. While its interests range over all aspects of the Department's work, its primary objective is to publicize Canadian products in foreign markets. This involves the production of booklets, catalogues, folders, posters and other material prepared for distribution at trade fairs abroad or at points being visited by Canadian trade missions. Advertising campaigns, using all appropriate media, are prepared to attract attention to Canadian exhibits at trade fairs or to acquaint foreign audiences with the services and assistance available to them from the Trade Commissioner Service at posts abroad. The Division produces *Canada Courier*, a publication on Canadian exports and exporters, which is distributed to businessmen abroad at periodic intervals.

A second Division edits and publishes *Foreign Trade*, a fortnightly magazine, and *Commerce extérieur*, a monthly, which are distributed to Canadian subscribers and are designed to inform and assist them in developing export markets. Each issue contains information on foreign exchange rates, trade and tariff regulations, marketing information and other valuable trade data. Articles by Trade Commissioners abroad discuss marketing needs and requirements in the areas they serve.

The Media Relations Division prepares and distributes press releases, articles, photographs, speeches and background information to newspapers, radio and television stations, magazines and trade publications throughout Canada. It provides publicity material for distribution by Trade Commissioners abroad and distributes motion picture films and TV film clips to promote interest in Canada as a supplier of a wide range of commodities.

Export Credits Insurance Corporation.—The Export Credits Insurance Corporation was established under the provisions of the Export Credits Insurance Act, 1944 (RSC 1952, c. 105 as amended) and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It operates in two fields—export credits insurance and export financing.

Insurance is available to all persons or corporations carrying on business in Canada to cover export sales made on customary credit terms. It provides protection against risks involved in the export, manufacture, treatment or distribution of goods, or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or the imposition of restrictions on the importation of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country.

The insurance is available under three main classifications—general commodities, capital goods, and services. General commodities policies cover a policyholder's export sales to all countries except the United States for a period of one year, and are renewable. Two types are available: the contracts policy, which insures an exporter against loss from the time he books an order until payment is received; or the shipments policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received.

Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit up to a maximum of five years may be necessary. Specific policies are issued for transactions involving capital goods but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services.

The Corporation insures exporters on a co-insurance basis, the exporter retaining a small percentage of the risk involved, and the same principle operates in the distribution of recoveries obtained after the payment of a claim.

The Corporation has authority to enter into certain contracts of insurance, which, although they would impose upon the Corporation a liability for a term or in an amount in excess of that normally undertaken, would, in the opinion of the Minister of Trade and Commerce, be considered in the national interest. The Corporation also administers direct financing facilities available under the Act in cases where export sales involving capital goods are of such a nature as to warrant credit terms in excess of five years. The Corporation, when authorized, buys the promissory notes or other negotiable instruments of the foreign purchaser.

Canadian Government Exhibition Commission.—The Canadian Government Exhibition Commission organizes, designs, produces and administers all Canadian exhibits at fairs and exhibitions abroad in which the Canadian Government participates. It also advises private exhibitors and their agents on the best means of displaying Canadian products at trade fairs, and prepares domestic exhibits for government departments and agencies on request. It is responsible for international fairs and exhibitions held in Canada that are financed and sponsored by the Government of Canada.

Canadian Government Travel Bureau.—The Canadian Government Travel Bureau is in operation to encourage tourist travel to Canada and to co-ordinate the tourist promotion conducted by the provinces, transportation companies and national, regional and local tourist associations. The Bureau undertakes extensive tourist advertising campaigns abroad, provides tourist publicity material for foreign newspapers, magazines, radio and television outlets, and annually handles more than 1,000,000 inquiries from potential visitors to Canada. It operates tourist offices in New York, Chicago and San Francisco in the United States and in London, England.

Section 2.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs, giving references to those editions of the Year Book where extended treatments may be found.

Subsection 1.—The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferential, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada which provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

Most-Favoured-Nation rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariffs, or under all Tariffs.

Valuation.—In general, the Customs Act, as amended effective Sept. 6, 1958, provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold "(a) to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions". In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit at least equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty may, in no case, be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Dumping.—Sect. 6 of the Customs Tariff provides that when the actual selling price of goods being imported is less than the fair market value and the goods are of a class or kind made or produced in Canada, a special or dumping duty shall be collected. This duty is to be equal to the difference between the actual selling price and the fair market

* Information relating to rate of duty and value for duty is available from the Department of National Revenue, Customs and Excise Division, which administers the Customs Act and the Customs Tariff.

value of the goods, except that it may not be more than 50 p.c. *ad valorem*. These provisions are designed to offset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices.

Drawback.—There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as “home consumption” drawbacks, is provided for under the Customs Tariff Act and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

The Tariff Board.—The organization and functions of the Tariff Board are described at pp. 112-113 of this volume.

Subsection 2.—Tariff and Trade Arrangements with Other Countries as at Dec. 31, 1962

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.

Canada accords preferential tariff treatment to all members of the Commonwealth and dependent territories with the exception of Hong Kong. In addition, preferences are extended to the Republics of Ireland and South Africa. The preferential arrangements with Britain, Australia, New Zealand, the West Indies, the Federation of Rhodesia and Nyasaland and the Republics of Ireland and South Africa are governed by bilateral trade agreements. A number of Commonwealth countries—India, Pakistan, Ghana, Nigeria, Tanganyika, Uganda and Kenya—do not accord preferential tariff treatment to Canadian goods. Canada's arrangements and agreements with Commonwealth countries have been modified on a number of occasions by the negotiations which Commonwealth countries have had with their non-Commonwealth trading partners in GATT.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on Oct. 30, 1947, and brought the General Agreement into force on Jan. 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade.

On Dec. 31, 1962, there were 44 contracting parties to the Agreement. The names of these, and the dates of their accession, are given in the list on pp. 948-956. In addition, Switzerland, Tunisia, Argentina and Yugoslavia have acceded provisionally. The contracting parties approved the provisional accession of the United Arab Republic, effective Jan. 9, 1963. Cambodia and Spain are expected to become full contracting parties in the near future. Poland also participates in the work of the GATT. Five rounds of major multilateral tariff negotiations have been held under the GATT—at Geneva in 1947, Annecy in 1949, Torquay in 1950-51 and again at Geneva in 1956 and 1960.

Canada already had most-favoured-nation trade agreements with most contracting parties prior to the effective date of the General Agreement. These arrangements continue in force in conjunction with the GATT. As an exception, however, the Canada-United States Trade Agreement was suspended for as long as both parties should continue to be contracting parties to the GATT.

Trade relations between Canada and many other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the mother country and by even less formal arrangements.

**Tariff and Trade Arrangements with Commonwealth Countries as at
Dec. 31, 1962**

Country	Agreement	Principal Terms
AUSTRALIA.....	Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BRITAIN.....	Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 20, 1947. GATT effective Jan. 1, 1948.	Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trustships.
CEYLON.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
CYPRUS.....	Relations continue to be governed by Trade Agreement of 1937 with Britain.	Canada exchanges preferential treatment with Cyprus.
GHANA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 18, 1957.	Canada accords Ghana the British preferential rates, except on cocoa beans. Exchange of most-favoured-nation treatment.
INDIA.....	Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948.	Canada accords British preferential treatment to India. Exchange of most-favoured-nation treatment.
JAMAICA, TRINIDAD, BAHAMAS, BARBADOS, BERMUDA, BRITISH GUIANA, BRITISH HONDURAS, AND THE LEEWARD AND WINDWARD ISLANDS.	Canada-British West Indies Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. GATT effective for Trinidad Aug. 31, 1962. Jamaica, Barbados, Bermuda, British Guiana, British Honduras and the Leeward and Windward Islands participate in GATT.	The parties exchange specified tariff preferences. Agreement may be terminated on six months notice.
MALAYA, FEDERATION OF...	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 24, 1957.	Canada and Federation of Malaya exchange preferential tariff treatment.
NEW ZEALAND.....	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July 26, 1948.	The parties exchange specific preferences on scheduled goods and reciprocally concede British preferential rates on items not scheduled. May be terminated on six months notice.

**Tariff and Trade Arrangements with Commonwealth Countries as at
Dec. 31, 1962—concluded**

Country	Agreement	Principal Terms
NIGERIA, FEDERATION OF...	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 1, 1960.	Canada accords British preferential treatment to Nigeria. Exchange of most-favoured-nation treatment.
PAKISTAN.....	Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948.	Canada accords British preferential treatment to Pakistan. Exchange of most-favoured-nation treatment.
RHODESIA AND NYASALAND, FEDERATION OF.	Trade Agreement signed Feb. 6, 1958; effective Feb. 7, 1958. GATT effective in Southern Rhodesia May 19, 1948; extended to whole Federation, Oct. 29, 1954.	Canada exchanges preferential tariffs with the Federation of Rhodesia and Nyasaland.
SIERRA LEONE.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Apr. 27, 1961.	Canada and Sierra Leone exchange preferential tariff treatment.
TANGANYIKA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Dec. 9, 1961.	Canada accords British preferential treatment to Tanganyika. Exchange of most-favoured-nation treatment.
UGANDA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 9, 1962.	Canada accords British preferential treatment to Uganda. Exchange of most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962**

ALGERIA.....	Franco-Canadian Trade Agreement of 1933 applied to Algeria.	Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation rates.
ARGENTINA.....	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941. Argentina has acceded to GATT provisionally.	Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice.
AUSTRIA.....	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
BELGIUM-LUXEMBOURG....	Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
BENELUX (BELGIUM-NETHERLANDS-LUXEMBOURG CUSTOMS UNION).	(See Belgium-Luxembourg and Netherlands).	
BOLIVIA.....	Order in Council of July 20, 1935, accepted Article 15 of Britain-Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BRAZIL.....	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation treatment.
BURMA.....	GATT effective July 29, 1948.	Exchange of most-favoured-nation treatment.
BURUNDI.....	Belgo-Canadian Convention of Commerce of 1924 applied to Burundi.	Since Burundi's independence in 1960, Canada has continued to grant most-favoured-nation rates.
CAMBODIA.....	Franco-Canadian Trade Agreement of 1933 applied to Cambodia.	Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation rates.
CAMEROON.....	Franco-Canadian Trade Agreement of 1933 applied to Cameroons.	Since the creation of Cameroon as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CENTRAL AFRICAN REPUBLIC.	Franco-Canadian Trade Agreement of 1933 applied to Central African Republic.	Since the creation of the Central African Republic as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CHAD.....	Franco-Canadian Trade Agreement of 1933 applied to Chad.	Since the creation of Chad as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CHILE.....	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation treatment.
CHINA.....	<i>Modus vivendi</i> signed Sept. 26, 1946.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
COLOMBIA.....	Treaty of Commerce with Britain of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938. A Trade Agreement between Colombia and Canada was signed Feb. 20, 1946, but has not been put into force.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
CONGO, REPUBLIC OF (BRAZZAVILLE).	Franco-Canadian Trade Agreement of 1933 applied to Congo (Brazzaville).	Since the creation of Congo (Brazzaville) as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
CONGO, REPUBLIC OF (LEOPOLDVILLE).	Belgo-Canadian Convention of Commerce of 1924 applied to Congo (Leopoldville).	Since the Congo's independence in 1960, Canada has continued to grant most-favoured-nation rates.
COSTA RICA.....	<i>Modus vivendi</i> signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CUBA.....	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment.
CZECHOSLOVAKIA.....	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
DAHOMEY.....	Franco-Canadian Trade Agreement of 1933 applied to Dahomey.	Since the creation of Dahomey as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
DENMARK (including GREENLAND).	Treaties of Peace and Commerce with Britain of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means for separate termination by Dominions on one years notice.
DOMINICAN REPUBLIC.....	Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment including scheduled concessions.
ECUADOR.....	<i>Modus vivendi</i> signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EGYPT.....	(See United Arab Republic).	
EL SALVADOR.....	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.
ETHIOPIA.....	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FINLAND.....	Exchange of notes of Nov. 13-17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FRANCE AND FRENCH OVER- SEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
GABON.....	Franco-Canadian Trade Agreement of 1933 applied to Gabon.	Since the creation of Gabon as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
GERMANY, FEDERAL REPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
GREECE.....	<i>Modus vivendi</i> by exchange of notes of July 24-28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
GREENLAND.....	(See Denmark)	
GUATEMALA.....	Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
GUINEA.....	Franco-Canadian Trade Agreement of 1933 applied to Guinea.	Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation rates.
HAITI.....	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment.
HONDURAS.....	<i>Modus vivendi</i> by exchange of notes signed July 11, 1956, ratified in Honduras, Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
ICELAND.....	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and Britain on Feb. 13, 1660.	Exchange of most-favoured-nation treatment.
INDONESIA.....	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation treatment.
IRAN.....	Special arrangement by Order in Council effective Feb. 1, 1951. Iran accorded most-favoured-nation treatment from Sept. 5, 1956.	Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.
IRAQ.....	Special arrangement by Order in Council effective Sept. 15, 1951.	Exchange of most-favoured-nation tariff treatment.
IRELAND.....	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933.	Canada grants British preferential tariff in return for preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice.
ISRAEL.....	Canada-Britain Agreement of 1937 continued to apply to the State of Israel after its foundation in May 1948. GATT effective July 5, 1962.	Exchange of most-favoured-nation rates.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
ITALY.....	<i>Modus vivendi</i> by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
IVORY COAST.....	Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast.	Since the creation of the Ivory Coast as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
JAPAN.....	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treatment. Remains in force for one year from ratification and thereafter unless terminated on three months notice.
KUWAIT.....	Canada-Britain Agreement of 1937 applied to Kuwait as a British Protectorate.	Since independence of Kuwait in June 1961, Canada has continued to accord most-favoured-nation rates.
LAOS.....	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation rates.
LEBANON.....	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.
LIBERIA.....	Special arrangement by Order in Council effective Mar. 1, 1955.	Canada grants most-favoured-nation tariff rates.
LIECHTENSTEIN.....	(See Switzerland).	
LUXEMBOURG.....	(See Belgium-Luxembourg).	
MADAGASCAR.....	Franco-Canadian Trade Agreement of 1933 applied to Madagascar.	Since the creation of Madagascar as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
MALI, FEDERATION OF.....	Franco-Canadian Trade Agreement of 1933 applied to Mali.	Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
MAURITANIA.....	Franco-Canadian Trade Agreement of 1933 applied to Mauritania.	Since the creation of Mauritania as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
MEXICO.....	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
MOROCCO.....	Various agreements applied to French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation rates.
NETHERLANDS.....	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
NICARAGUA.....	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment.
NIGER.....	Franco-Canadian Trade Agreement of 1933 applied to Niger.	Since the creation of Niger as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
NORWAY.....	Convention of Commerce and Navigation with Britain of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
PANAMA.....	Order in Council of July 20, 1935, accepted Article 12 of Britain-Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
PARAGUAY.....	Exchange of notes of May 21, 1940; in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
PERU.....	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.
PHILIPPINES.....	No agreement.	Canada and Philippines, without contractual obligation, continue to exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States).
POLAND.....	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936.	Exchange of most-favoured-nation treatment including scheduled reductions. May be terminated on three months notice.
PORTUGAL, PORTUGUESE ADJACENT ISLANDS AND PORTUGUESE OVERSEAS PROVINCES.	Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955. GATT effective May 6, 1962.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—continued**

Country	Agreement	Principal Terms
SENEGAL.....	Franco-Canadian Trade Agreement of 1933 applied to Senegal.	Since the creation of Senegal as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
SOUTH AFRICA.....	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932.	Exchange of British preferential rates on scheduled items. May be terminated on six months notice.
	Exchange of notes Aug. 2-31, 1935; effective retroactively from July 1, 1935.	
	GATT effective June 14, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
SPAIN AND SPANISH POSSESSIONS.	Since Aug. 1, 1928, Canada has adhered to Britain-Spain Treaty of Commerce of Oct. 31, 1922.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
	Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955.	Supplements and amends Britain-Spain Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice.
SWEDEN.....	Britain-Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. GATT effective May 1, 1950.	Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by the Dominions on one years notice.
SWITZERLAND.....	Britain-Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947.	Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914 provides means for separate termination by the Dominions on one years notice.
	Switzerland has acceded to GATT provisionally.	
SYRIAN ARAB REPUBLIC...	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment.
Togo.....	Franco-Canadian Trade Agreement of 1933 applied to Togo.	Since the creation of Togo as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
TUNISIA.....	Franco-Canadian Trade Agreement of 1933 applied to Tunisia.	Since the creation of Tunisia as an independent state in 1956, Canada has continued to grant most-favoured-nation rates.
	Tunisia has acceded to GATT provisionally.	

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Dec. 31, 1962—concluded**

Country	Agreement	Principal Terms
TURKEY.....	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
UNION OF SOVIET SOCIALIST REPUBLICS.	Trade Agreement signed Feb. 29, 1956; renewed Apr. 18, 1960. Ratifications exchanged Sept. 16, 1960.	Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase from Canada twice as much as their sales to Canada up to \$25,000,000 annually. At least half of Soviet purchases are to be in wheat. In force for three years from date of signature and may thereafter be extended by mutual agreement.
UNITED ARAB REPUBLIC (EGYPT).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952.	Exchange of most-favoured-nation rates. May be terminated on six months notice.
UNITED STATES.....	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment exchanged.
UPPER VOLTA (VOLTAIC REPUBLIC).	Franco-Canadian Trade Agreement of 1933 applied to Upper Volta.	Since the creation of Upper Volta as an independent state in 1960, Canada has continued to grant most-favoured-nation rates.
URANDA.....	Belgo-Canadian Convention of Commerce of 1924 applied to Uranda.	Since Uranda's independence in 1960, Canada has continued to grant most-favoured-nation rates.
URUGUAY.....	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Exchange of most-favoured-nation treatment.
VENEZUELA.....	<i>Modus vivendi</i> signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal.
VIET NAM.....	Franco-Canadian Trade Agreement of 1933 applied to Viet Nam.	Since the creation of Viet Nam as an independent state in 1955, Canada has continued to accord most-favoured-nation rates.
YUGOSLAVIA.....	Trade Agreements Act of June 11, 1928, accepted Article 30 of Britain-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. Yugoslavia has acceded to GATT provisionally.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

PART IV.—TRAVEL BETWEEN CANADA AND OTHER COUNTRIES*

Travel between Canada and other countries (exclusive of visitors arriving direct from countries other than the United States) consisted of nearly 60,000,000 trips in 1962. The slight decline from the 1961 figure was attributable to fewer re-entries of Canadians returning from trips to the United States which numbered 27,944,600 as compared with 29,288,500 in 1961. Re-entries of Canadians returning direct from overseas countries numbered 253,400, a figure 30,300 higher than in the previous year. In 1962, 31,656,400 visitors entered Canada from the United States, 1,182,200 more than in 1961. The basic record of the volume of non-immigrant travel to Canada from overseas countries is not available for 1961 or 1962. Prior to January 1961, transportation companies were required to complete a form for the Department of Citizenship and Immigration which provided certain details on this movement. However, a request from the transportation companies to be relieved of this procedure was granted and, as a result, the record of visits from overseas countries was no longer available.

1.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, 1950-62

Year	U.S. Travellers in Canada	U.S. Expenditure in Canada	Canadians Travelling in U.S.	Canadian Expenditure in U.S.	Excess of U.S. Travellers in Canada	Balance of Payments with the U.S.
	No.	\$'000	No.	\$'000	No.	\$'000
1950.....	23,516,700	260,000	16,000,800	193,000	+7,515,900	+ 67,000
1951.....	24,879,500	258,000	18,586,900	246,000	+6,282,600	+ 12,000
1952.....	26,276,800	257,000	21,512,000	294,000	+4,764,800	- 37,000
1953.....	28,024,700	282,000	23,311,800	307,000	+4,712,900	- 25,000
1954.....	26,412,600	283,000	23,343,400	320,000	+3,069,200	- 37,000
1955.....	28,283,400	303,000	24,753,800	363,000	+3,529,600	- 60,000
1956.....	27,666,500	309,000	27,076,700	391,000	+ 589,800	- 82,000
1957.....	28,619,400	325,000	27,209,400	403,000	+1,410,000	- 78,000
1958.....	28,530,700	309,000	27,421,700	413,000	+1,109,000	-104,000
1959.....	29,880,800	351,000	27,989,900	448,000	+1,890,900	- 97,000
1960.....	29,654,600	375,000	29,045,800	462,000 ¹	+ 608,800	- 87,000
1961.....	30,474,200	435,000	29,288,500	459,000 ¹	+1,185,700	- 24,000
1962.....	31,656,400	512,000	27,944,600	419,000 ¹	+3,711,800	+ 93,000

¹ Includes Hawaii.

Expenditures in 1962 on international travel between Canada and other countries was estimated at well over \$1,000,000,000, about \$43,000,000 higher than such expenditures in 1961. Receipts from visitors to Canada amounted to \$562,000,000—\$512,000,000 from residents of the United States and \$50,000,000 from residents of overseas countries, representing gains of \$77,000,000 and \$3,000,000, respectively, over 1961. The devaluation of the Canadian dollar in May 1962 no doubt contributed to the substantial increase in United States travel expenditures in Canada and, conversely, had the effect of reducing Canadian travel expenditures in the United States. The latter dropped from \$459,000,000 in 1961 to \$419,000,000 in 1962, while Canadian travel expenditures in overseas countries showed a slight increase from \$183,000,000 to \$186,000,000. Effective June 25, 1962, as part of a series of official actions to relieve pressure on the Canadian dollar, the customs exemption on Canadian purchases of merchandise in the United States was reduced from \$100 to \$25 every four months.

Expenditures by Canadians for travel in other countries have exceeded receipts from residents of other countries travelling in Canada since 1950. The small deficit of \$6,000,000 occurring in 1951 gradually increased to a maximum of \$207,000,000 in 1959 and 1960 and then declined to \$160,000,000 in 1961 and \$43,000,000 in 1962.

* Prepared in the Travel Statistics Unit, National Accounts and Balance of Payments Division, Dominion Bureau of Statistics.

Travel account between Canada and overseas countries changed from an equilibrium in 1946 to a deficit of \$136,000,000 in 1961 and 1962. The debit balance in the travel account with the United States was restricted to the decade 1952-61, inclusive, during which period the deficit increased from \$37,000,000 to a record \$104,000,000 in 1958 and then dropped to \$97,000,000 in 1959, \$87,000,000 in 1960 and \$24,000,000 in 1961; in 1962 there was a credit balance of \$93,000,000. Visitors crossing the border from the United States into Canada increased in number from 30,500,000 in 1961 to 31,700,000 in 1962 and their expenditures in Canada rose from \$435,000,000 to \$512,000,000. In the other direction, however, the number of crossings was reduced from 29,300,000 in 1961 to 27,900,000 in 1962 and expenditures of Canadian visitors to the United States dropped from \$459,000,000 to \$419,000,000.

2.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, by Means of Travel and Length of Stay, 1961 and 1962

Year and Item	U.S. Travellers in Canada ¹	U.S. Expenditures in Canada	Canadians Travelling in the U.S. ¹	Canadian Expenditure in the U.S.	Excess of U.S. Travellers in Canada	Excess of U.S. Expenditures in Canada
	No.	\$'000	No.	\$'000	No.	\$'000
1961						
Short-Term (24 Hours or Less)—						
Automobile.....	15,982,500	24,868	19,036,900	34,562	-3,054,400	- 9,694
Aircraft.....	31,200	750	14,800	993	+ 16,400	+ 243
Bus.....	91,100	639	45,500	265	+ 45,600	+ 374
Rail.....	292,500	457	14,500	303	+ 278,000	+ 154
Boat.....	97,800	692	21,800	87	+ 76,000	+ 605
Other (pedestrians, local bus, etc.)	4,607,400	20,995	4,684,500	19,377	- 77,100	+ 1,618
Totals, Short-Term.....	21,102,500	48,401	23,818,000	55,587	-2,715,500	- 7,186
Long-Term (Over 24 Hours)—						
Automobile.....	8,005,400	242,236	4,301,800	203,041	+3,703,600	+ 39,195
Aircraft.....	454,400	62,684	442,900	107,608	+ 11,500	- 44,924
Bus.....	324,300	33,634	385,300	46,082	- 61,000	- 12,448
Rail.....	219,700	28,649	252,100	38,550	- 32,400	- 9,901
Boat.....	367,900	19,713	88,400	3,861	+ 279,500	+ 15,852
Totals, Long-Term.....	9,371,700	386,916	5,470,500	399,142	+3,901,200	- 12,226
Grand Totals, 1961.....	30,474,200	435,317	29,288,500	454,729²	+1,185,700	- 19,412²
1962						
Short-Term (24 Hours or Less)—						
Automobile.....	16,042,800	29,996	18,588,000	33,480	-2,545,200	- 3,484
Aircraft.....	35,900	891	17,200	1,198	+ 18,700	+ 307
Bus.....	87,000	756	54,100	480	+ 32,900	+ 276
Rail.....	288,100	421	22,100	373	+ 266,000	+ 48
Boat.....	219,300	1,299	16,600	72	+ 202,700	+ 1,227
Other (pedestrians, local bus, etc.)	4,903,600	25,271	4,309,000	13,185	+ 594,600	+ 12,086
Totals, Short-Term.....	21,576,700	58,634	23,007,000	48,788	-1,430,300	+ 9,846
Long-Term (Over 24 Hours)—						
Automobile.....	8,558,600	293,013	3,765,900	169,615	+4,792,700	+123,398
Aircraft.....	446,600	64,614	467,900	113,604	- 21,300	- 48,990
Bus.....	368,700	40,410	376,800	41,894	- 8,100	- 1,484
Rail.....	223,600	30,960	228,900	36,258	- 300	- 5,298
Boat.....	477,200	24,776	98,100	3,954	+ 379,100	+ 20,822
Totals, Long-Term.....	10,079,700	453,773	4,937,600	365,325	+5,142,100	+ 88,448
Grand Totals, 1962.....	31,656,400	512,407	27,944,600	414,113²	+3,711,800	+ 98,294²

¹ Includes substantial amounts of in-transit, commuting and local traffic.

² Excludes Hawaii.

3.—Highway Traffic at Canadian Border Points, 1961 and 1962

Year, Province or Territory	Foreign Vehicles Inward				Canadian Vehicles Returning		
	Staying 24 Hours or Less	Staying Over 24 Hours	Repeats and Taxis	Com- mercial Vehicles	After Staying 24 Hours or Less	After Staying Over 24 Hours	Com- mercial Vehicles
	No.	No.	No.	No.	No.	No.	No.
1961							
Atlantic Provinces.....	234,073	158,925	1,186,555	81,276	1,883,640	124,692	129,650
Quebec.....	320,815	336,251	181,612	112,331	1,098,335	381,967	165,244
Ontario.....	2,927,477	2,121,440	884,649	184,943	3,038,938	545,361	256,107
Manitoba.....	52,163	46,349	53,227	27,473	169,244	79,052	34,078
Saskatchewan.....	21,347	23,742	14,106	8,146	79,475	29,542	7,357
Alberta.....	13,036	43,815	21,993	7,373	59,184	39,212	9,653
British Columbia.....	167,066	280,930	58,306	58,244	932,913	266,314	48,598
Yukon Territory.....	297	14,481	—	1,443	535	678	260
Totals, 1961.....	3,736,274	3,025,933	2,400,448	481,229	7,262,264	1,466,818	650,947
1962							
Atlantic Provinces.....	260,238	162,791	1,156,677	79,221	1,872,867	135,078	128,626
Quebec.....	324,121	339,881	172,565	107,437	1,054,946	349,027	169,100
Ontario.....	3,049,399	2,236,169	851,087	201,168	3,057,106	432,570	249,635
Manitoba.....	52,210	48,961	52,056	22,649	163,065	69,393	26,661
Saskatchewan.....	25,304	25,311	14,590	9,652	72,246	23,242	7,168
Alberta.....	14,398	46,230	21,822	8,551	59,933	28,705	9,804
British Columbia.....	195,588	353,631	53,790	58,299	862,118	229,889	38,819
Yukon Territory.....	860	17,623	189	2,155	2,374	952	731
Totals, 1962.....	3,922,118	3,230,597	2,322,776	489,132	7,144,655	1,268,856	630,544

Many factors influence the flow of American visitors to Canada, among them being the ease of making border crossings, the location of highly populated areas near the International Boundary, the natural attractions of the country, and the currency exchange rate and the economic situation generally. In addition, the recent construction of new roads and bridges has enticed the motor traveller to cross the border; of particular interest has been the completion of the Trans-Canada Highway north of Lake Superior and the international bridges at Prescott and Rainy River in Ontario, connecting the United States with Canada.

Completion of the Trans-Canada Highway north of Lake Superior has had an effect mainly on foreign vehicles entering and departing from Canada at Pigeon River to the west of Lake Superior and Sault Ste. Marie to the east. During the six-month period, May to October 1961 (the latest year for which data are available), 41,500 vehicles entered Canada at Pigeon River and stayed two days or more, compared with 26,800 a year earlier. Entries via Sault Ste. Marie for the same two periods were 81,000 and 62,300, respectively.

In addition to the increase in crossings, the records show that fewer vehicles returned at the point of entry. It would appear that since the completion of the Trans-Canada Highway the "circle tour" of both Lake Superior in Canada and Lake Michigan in the United States is becoming popular. Motorists using the direct route between Pigeon River and Sault Ste. Marie cover approximately 485 miles in Canada.

The new bridge spanning the St. Lawrence River at Prescott in Ontario also had an effect on the flow of traffic to Canada. In the year ended September 1961, 51,100 foreign automobiles entered Canada at Prescott, 21,000 more than during the previous year. Similarly, the new bridge at Rainy River was responsible for more entries in that area. During the year ended June 1961, 13,900 foreign automobiles crossed into Canada at that point, almost double the number in the previous year.

CHAPTER XXI.—PUBLIC FINANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Combined statistics of public finance for all governments in Canada—federal, provincial and municipal—are presented in Section 1 of this Chapter and Section 2 covers the incidence of taxation at the three levels. More detailed information for each level of government is given in Sections 3, 4 and 5.

A report on the financial statistics of Federal Government business enterprises was issued for the first time in October 1962; analyses of their assets, liabilities, revenues and expenditures are shown in Section 3, pp. 995–996. The first report on the financial statistics of provincial government enterprises, released in the autumn of 1963, is summarized in Section 4, pp. 1004–1005.

Government enterprise finances are usually reflected to a certain extent in the general statistics of the governments. For example, the portion of their profits that is remitted to the parent government appears in Table 1 (receipts from government enterprises); government contributions toward enterprise capital construction and toward their operating deficits appear in Table 2 (payments to own government enterprises); and the direct debt of government enterprises that is guaranteed by the parent government appears in Table 3 (the bulk of the item “guaranteed bonds” represents direct issues of government enterprises).

Section 1.—Combined Statistics of Public Finance for All Governments

Combined Revenue and Expenditure.—Tables 1 and 2 give details of the federal, provincial and municipal net combined revenue by source and net combined current and capital expenditure by function, respectively, for 1959 and 1960. This net basis has been prepared by deducting from revenue, and the appropriate expenditure, certain specified amounts such as grants-in-aid and shared-cost contributions from other governments institutional revenue, and interest, premium, discount and exchange revenue. Amounts provided for debt retirement are excluded to avoid duplication since all expenditure resulting from capital borrowings is included.

* Except as otherwise indicated, revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offset against any specific expenditure. These are set out separately in Tables 1 and 2 in order to prevent duplication and to provide additive totals. Because of the differing accounting practices of governments and variations in fiscal year-ends, discrepancies appear between the amounts recorded as inter-government transfers in the two tables.

1.—Combined Revenue of All Governments, 1959 and 1960

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Source of Revenue	1959				1960			
	Federal	Pro- vincial	Munic- ipal	Total	Federal	Pro- vincial	Munic- ipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—								
Income—								
Corporations	1,234,216	248,987	—	1,483,203	1,380,128	269,072	—	1,649,200
Individuals	1,752,194	54,454	—	1,806,648	1,940,560	60,678	—	2,001,238
Interest, dividends and other income going abroad	73,353	—	—	73,353	88,174	—	—	88,174
General sales	1,002,658	209,211	73,435	1,285,304	990,848	211,830	80,235	1,282,913
Motor fuel and fuel oil sales	—	382,560	640	383,200	—	402,909	419	403,328
Other sales	—	55,085	2,207	57,292	—	56,922	2,784	59,706
Excise duties and special excise taxes	620,661	—	—	620,661	633,216	—	—	633,216
Customs import duties	525,722	—	—	525,722	498,698	—	—	498,698
Real and personal property	—	8,330	1,157,236	1,165,566	—	8,386	1,287,959	1,296,345
Business	—	—	39,135 ¹	39,135	—	—	43,581 ¹	43,581
Estate taxes and succession duties	88,431	56,247	—	144,678	84,879	60,456	—	145,335
Other	1,373	153,599	8,337	163,309	1,622	177,004	9,486	188,112
Totals, Taxes	5,298,608	1,168,473	1,280,990	7,748,071	5,618,125	1,247,257	1,424,464	8,289,846
Privileges, Licences and Permits—								
Liquor control and regulation	10	44,920	—	44,930	—	47,149	—	47,160
Motor vehicle	—	164,610	—	164,610	11	172,013	—	172,013
Natural resources	5,924	303,311	—	309,235	4,166	276,869	—	281,035
Other	20,211	26,698	24,748	71,657	19,159	27,884	25,152	72,195
Totals, Privileges, Licences and Permits	26,145	539,539	24,748	590,432	23,336	523,915	25,152	572,403
Sales and services	46,843	37,295	—	84,138	57,030	38,286	—	95,316
Receipts from Government Enterprises—								
Liquor boards and commissions	—	190,227	—	180,227	—	186,157	—	186,157
Other	88,366	6,851	36,563	131,780	108,155	6,447	30,398	145,000
In lieu of municipal taxes from federal and provincial government enterprises	—	—	8,826	8,826	—	—	10,437	10,437
Totals, Receipts from Government Enterprises	88,366	187,078	45,389	320,833	108,155	192,604	40,835	341,594
Other revenue	235,274	11,240	103,293	349,807	254,813	11,837	104,463	371,113
Non-revenue and surplus receipts	40,610	3,737	—	44,347	41,145	3,420	—	44,565
Totals, Net General Revenue excluding Inter-government Transfers	5,735,846	1,947,362	1,454,420	9,137,628	6,102,604	2,017,319	1,594,914	9,714,837
Inter-government Transfers—								
Tax-sharing arrangements	—	461,348	—	461,348	—	480,875	—	480,875
Share of income tax on power utilities	—	4,754	—	4,754	—	4,226	—	4,226
Subsidies	—	53,772	65,393	119,165	—	53,714	68,957	122,671
Special payments	—	—	2,701	2,701	—	—	2,362	2,362
Grants in lieu of municipal taxes on federal and provincial property	—	—	23,251	23,251	—	—	27,753	27,753
Grand Totals, Net General Revenue	5,735,846	2,467,236	1,545,765	9,748,847	6,102,604	2,556,134	1,693,956	10,352,724

¹ Incomplete; not separable from real property taxes in some provinces.

2.—Combined Expenditure of All Governments, 1959 and 1960

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Function	1959				1960			
	Federal	Pro- vincial	Municipal ¹	Total	Federal	Pro- vincial	Municipal ¹	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Defence services and mutual aid.	1,542,545	—	—	1,542,545	1,534,411	—	—	1,534,411
Veterans pensions and other benefits.	293,106	—	—	293,106	296,071	—	—	296,071
Health, hospital care and other..	226,789	436,923	68,426	732,138	267,222	508,612	65,516	841,350
Social Welfare—								
Aid to aged persons.	605,348 ²	60,134	..	..	623,070 ²	63,010	..	..
Aid to unemployed and unemployables.	56,218	41,417	..	..	67,906	54,976	..	509,396
Family allowances.	494,138	—	—	494,138	509,396	—	—	99,097
National employment services.	82,456	—	—	82,456	99,097	—	—	211,561
Other.	23,780	104,384	37,982	166,146	28,506	139,617	43,438	1,578,425
Education.	69,479	602,851	658,309	1,330,639	64,480	700,123	813,822 ³	1,578,425
Transportation and Communications—								
Highways, roads and bridges..	108,651	675,821	345,637	1,130,109	104,964	708,057	361,320	1,174,341
Other.	267,627	4,630	—	272,257	272,041	5,223	—	277,264
Natural resources and primary industries.	286,410	174,089	—	460,499	366,113	200,983	—	567,096
Debt charges excluding debt retirement.	657,066	54,965	117,753	829,784	654,411	66,878	95,918 ⁴	817,207
Payments to own government enterprises.	154,252	4,717	13,919	172,888	149,158	5,472	20,202	174,832
General government.	251,571	110,519	129,425	491,515	265,603	125,150	141,447	532,200
Protection of persons and property	76,185	125,625	211,847	413,657	79,187	136,264	232,163	447,614
Sanitation and waste removal.	—	—	134,162	134,162	—	—	142,182	142,182
International co-operation and assistance.	79,654	—	—	79,654	81,820	—	—	81,820
Other.	368,787	62,826	136,201	567,814	406,172	78,508	195,135	679,815
Non-expenditure and surplus payments.	499	19,361	—	19,860	520	9,746	—	10,266
Totals, Net General Expenditure excluding Inter-government Transfers.	5,644,561	2,478,262	1,853,661	9,976,484	5,870,148	2,802,619	2,111,143	10,783,910
Inter-government Transfers—								
Tax-sharing arrangements.	461,341	—	—	461,341	480,873	—	—	480,873
Share of income tax on power utilities.	4,753	—	—	4,753	4,226	—	—	4,226
Subsidies.	53,774	65,293	—	119,067	53,718	68,692	—	122,410
Special payments.	1,809	1,114	—	2,923	1,753	—	—	1,753
Grants in lieu of municipal taxes on federal and provincial property.	22,605	1,266	—	23,871	24,722	1,464	—	26,186
Grand Totals, Net General Expenditure.	6,188,843	2,545,935	1,853,661	10,588,439	6,435,440	2,872,775	2,111,143	11,419,358

¹ Excludes capital expenditures out of capital fund for the Province of Quebec.
 from Old Age Security Fund.

² Includes pensions paid

³ Includes interest on debentures issued for school purposes.

⁴ Excludes

Consolidated Debt.—Table 3 gives details of combined debt of all governments for 1959 and 1960 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.

3.—Consolidated Debt of All Governments, 1959 and 1960

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Item	1959					1960						
	Federal	Pro- vincial	Municipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt	Federal	Pro- vincial	Municipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt—												
Funded debt ¹	13,765,152	3,497,621	3,804,096	21,066,869	198,009	20,868,860	14,132,915	3,790,466	4,278,455	22,201,836	189,427	22,012,409
Less sinking funds.....	85,272	618,158	132,937	836,367	—	836,367	17,018	655,863	132,076	824,957	—	824,957
Net funded debt.....	13,679,880	2,879,463	3,671,159	20,230,502	198,009	20,032,493	14,115,897	3,134,603	4,126,379	21,376,879	189,427	21,187,452
Treasury bills ²	2,125,000	46,837	—	2,171,837	—	2,171,837	1,935,000	62,568	—	1,997,568	—	1,997,568
Savings deposits.....	29,372	—	—	29,372	—	29,372	28,513	—	—	28,513	—	28,513
Temporary loans.....	—	26,547	246,281	272,828	—	272,828	—	31,846	263,658	295,504	—	295,504
Other direct liabilities.....	4,850,831	374,238	338,555	5,563,624	47,454	5,516,170	5,289,877	440,723	380,974	6,111,574	55,357	6,056,217
Totals, Direct Debt (less sinking funds).....	20,685,083	3,327,085	4,255,995	28,268,163	245,463	28,022,700	21,369,287	3,669,740	4,771,011	29,810,038	244,784	29,565,254
Indirect Debt—												
Guaranteed bonds.....	1,430,107	2,908,265	80,141	4,506,513	193,918	4,312,595	1,672,690	3,361,686	73,878	5,108,254	242,665	4,865,589
Less sinking funds.....	—	67,673	1,862	69,535	2,039	67,496	—	82,569	1,555	84,124	2,292	81,832
Net guaranteed bonds.....	1,430,107	2,928,592	78,279	4,436,978	191,879	4,245,099	1,672,690	3,279,117	72,323	5,024,130	240,373	4,783,757
Loans under the Municipal Improve- ment Assistance Act, 1938.....	—	1,841	—	1,841	1,841	—	—	1,636	—	1,636	—	—
Guaranteed bank loans and other in- direct liabilities.....	2,944,992 ⁴	150,939	15	3,095,946	2,084	3,093,862	3,343,623	154,728	13	3,498,364	3,742	3,494,622
Totals, Indirect Debt (less sinking funds).....	4,375,099	3,081,372	78,294	7,534,765	195,804	7,338,961	5,016,313	3,435,481	72,336	8,524,130	245,751	8,278,379
Grand Totals.....	25,060,182	6,408,457	4,334,289	35,802,928	441,267	35,361,661	26,385,600	7,105,221	4,843,347	38,334,168	490,535	37,843,633

¹ Includes treasury bills having a term of less than 12 months.

¹ Includes treasury bills having a term of two or more years.

² Excludes contingent liability in respect of Federal Government guarantee of deposits maintained by chartered banks in the Bank of Canada and mis-
cellaneous guarantees, the amounts of which were not finally determined or were indeterminate at the close of the fiscal year.

³ Includes in "Other direct

Section 2.—Taxation in Canada*

Canada is a federal state with a central government and ten provincial governments. In 1867 the principal colonies of the British Crown in North America joined together to form the nucleus of a new nation and the British North America Act of that year became its written constitution. This statute created a central government with certain powers while continuing the existence of political subdivisions called provinces with powers of their own.

Under the British North America Act the Parliament of Canada has the right of raising "money by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the Province in order to the raising of a Revenue for Provincial purposes". Thus the provinces have a right to share only in the field of direct taxation while the Federal Government is not restricted in any way in matters of taxation. The British North America Act also empowers the provincial legislatures to make laws regarding "municipal institutions in the Province". This means that the municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned. Thus, from a practical standpoint, municipalities are also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". In essence, this conception has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under the guidance of provincial legislation, tax real estate, water consumption, places of business and in some cases retail sales. The Federal Government levies direct taxes on income, on gifts, and on the estates of deceased persons and indirect taxes such as excise taxes, excise and customs duties, and a sales tax.

The increasing use by both the federal and the provincial governments of their rights in the field of direct taxation in the 1930's resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of tax agreements, each normally enduring for a period of five years, were concluded between the federal and the provincial governments to promote the orderly imposition of direct taxes. All provinces surrendered their claims to personal income tax for the duration of the wartime agreements which expired in 1947. The Provinces of Quebec and Ontario did not rent any tax fields under the 1947 agreements. The Province of Quebec did not rent any of its tax fields under the 1952 and 1957 agreements; the Province of Ontario did not rent succession duties under the 1952 agreements and did not rent either succession duties or corporation income tax under the 1957 agreements. Apart from these exceptions all provinces participated in the various tax agreements as fully as possible. Newfoundland rented its tax fields as soon as it entered Confederation.

Under these agreements, the participating provinces undertook, in return for compensation, not to use or permit their municipalities to use certain of the direct taxes. Under the last two agreements, the federal income tax and death tax otherwise payable in non-participating provinces were abated by a fixed percentage to make room for the provincial levies. The Wartime Tax Agreements of 1942 are outlined in the 1946 Year Book, pp. 900-901; the 1947 and 1952 Tax Rental Agreements in the 1954 Year Book, pp. 1087-1090; and the 1957 fiscal arrangements in the 1961 Year Book, pp. 1067-1069. The 1962 fiscal arrangements are authorized by the Federal-Provincial Fiscal Arrangements Act, assented to Sept. 29, 1961. They became operative on Apr. 1, 1962 and will run until Mar. 31, 1967.

Basically, the 1962-67 arrangements entail a partial federal withdrawal from the field of direct taxation and the re-entry of all provinces into the vacated area. The Federal Government reduces its personal income tax otherwise payable on income earned in a province, and on income received by a resident of a province, by the following percentages:

* Revised (July 1963) in the Taxation Division, Department of Finance, under the direction of F. R. Irwin, Director of the Division, and by the provincial authorities concerned.

16 p.c. in 1962; 17 p.c. in 1963; 18 p.c. in 1964; 19 p.c. in 1965; and 20 p.c. in 1966. Also, the Federal Government reduces its rate of corporation income tax on taxable income of corporations earned in the provinces. The reduction is 9 p.c. of taxable income earned in any province except Quebec and 10 p.c. of taxable income earned in Quebec. The additional 1 p.c. reduction in respect of taxable income earned in Quebec is to compensate for the additional tax levied by the province on corporation income to provide grants to universities. These provincial grants replace federal grants which in other provinces are paid to the universities by the Federal Government through the Canadian Universities Foundation. Finally, the Federal Government abates the federal estate tax otherwise payable by 50 p.c. in respect of property situated in a province which levies its own death tax. Only Ontario, Quebec and British Columbia at present levy death taxes in the form of succession duties.

These reductions in federal income tax and estate tax under the terms of the 1962-67 arrangements do not apply to the Yukon Territory or the Northwest Territories or to income earned outside Canada. The Yukon and Northwest Territories do not impose income taxes or death taxes.

The provincial tax rates are not restricted to the extent of the federal withdrawal. Their constitutional position permits them unlimited use of direct taxes for the raising of revenue for provincial purposes. However, in all but four provinces (Ontario, Quebec, Manitoba and Saskatchewan) rates of income tax coincide with the amount of the federal abatement.

As part of the 1962-67 arrangements, the Federal Government has entered into tax collection agreements under which it collects the provincial personal income taxes for all provinces except Quebec and the provincial corporation income taxes for all provinces except Ontario and Quebec.

Under the terms of 1962-67 arrangements, adjustment grants are made to the Atlantic Provinces in recognition of their special circumstances. These grants amount to \$35,000,000 per annum and are distributed as follows: \$10,500,000 to each of the Provinces of Newfoundland, Nova Scotia and New Brunswick, and \$3,500,000 to the Province of Prince Edward Island. Newfoundland gets an additional \$8,000,000 annually under the terms of the Newfoundland Additional Grants Act of 1959.

Subsection 1.—Federal Taxes

Individual Income Tax

Every individual who is a resident of Canada at any time during a year is liable for the payment of income tax for that year. In addition, every non-resident individual who is employed or carries on business in Canada during a year is required to pay tax on his income from Canadian sources. Canadian taxation practice is based to a large extent on the British experience. This is reflected particularly in the fact that taxation is on the basis of residence rather than citizenship, and in the tax freedom for capital gains. The term "residence" is difficult to define simply but, generally speaking, it is taken to be the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also extensions of the meaning of Canadian resident to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an ambassador, a high commissioner, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person.

The Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from all businesses, property, offices and employments. It does not include capital gains unless they arise out of the conduct of a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, fees, annuities, pension benefits, allowances, interest, alimony, maintenance payments and other miscellaneous sources of income. On the other hand, war service disability pensions paid by Canada or an ally of Her Majesty at the time of the war service, unemployment insurance benefits, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family allowances do not have to be included in the computation of income.

In computing his income, an individual who is carrying on business may deduct business expenses including depreciation (called capital cost allowances), interest on borrowed money, reserves for doubtful debts, contributions to pension plans or deferred profit-sharing plans for his employees, bad debts, and expenses incurred for scientific research. In general, no deductions are allowed in computing income from salary and wages although there are exceptions. These exceptions include travelling expenses of employees who have to travel as they perform their work (such as employees on trains), union dues, alimony payments, and contributions to registered pension plans. Individuals may deduct, within limits, amounts set aside to provide a future income under registered retirement savings plans. Students in full-time attendance at a university or other educational institution in a course at a post-secondary school level may deduct their tuition fees in computing their income.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions: for single status an exemption of \$1,000; for married status an exemption of \$2,000; for dependent children eligible to receive family allowance \$300 per child; for other dependants (as defined in the law), \$550 per dependant; for a taxpayer over 65 years of age, an additional \$500; for a taxpayer who is blind or confined to a bed or a wheelchair for the whole of the taxation year, an additional \$500; for charitable donations, up to 10 p.c. of income; and for medical expenses in excess of 3 p.c. of income. In lieu of claiming deductions for charitable donations, medical expenses and membership dues in trade unions or professional societies, an individual may claim a standard deduction of \$100.

As already stated, an individual who is resident in Canada for the whole year is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed only on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. (A non-resident who derives investment income from Canada is taxed in a different way described under a separate heading.) An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year will be subject to income tax in Canada on that part of his income for the year received while he is resident in Canada. In these circumstances the deductions from income permitted for determining taxable income will be the amount that may reasonably be considered as applicable to the period during which he is resident in Canada.

A progressive schedule of rates is applied to taxable income. These rates begin at 11 p.c. on the first \$1,000 of taxable income and increase to 80 p.c. on taxable income in excess of \$400,000. In addition, an old age security tax is levied on taxable income at the rate of 3 p.c. with a maximum of \$90 reached at the level of \$3,000.

In calculating the amount of his income tax, an individual is allowed tax credits under three main headings: (1) *Dividend Tax Credit*—to partially eliminate the double taxation of corporate profits and to encourage participation in the ownership of Canadian companies, Canadian resident individuals are allowed to deduct from their tax an amount equal to 20 p.c. of the net dividends they receive from Canadian taxable companies; (2) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income; and (3) *Abatement under Federal-Provincial Arrangements*—in 1963 the

federal personal income tax otherwise payable on income of a resident of a province and on income earned in a province is reduced by 17 p.c. This abatement will increase by one percentage point a year until it becomes 20 p.c. in 1966.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages have tax deducted from their pay by their employer and in this way pay nearly 100 p.c. of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return before Apr. 30 in the following year. People with more than 25 p.c. of their income from sources other than salary or wages must pay tax by quarterly instalments throughout the year. Here again returns must be filed before Apr. 30 in the following calendar year.

The following statement shows what taxpayers pay at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of \$100. No allowance has been made for the 20-p.c. dividend tax credit. In calculating the taxes shown for a married taxpayer with two children eligible for family allowances, a deduction of \$300 has been allowed for each child.

<u>Status</u>	<u>Income</u>	<u>Income Tax</u>	<u>Old Age Security Tax</u>
	\$	\$	\$
Single taxpayer—no dependants.....	1,200	11	3
	1,500	44	12
	2,000	99	27
	2,500	166	42
	3,000	236	57
	5,000	591	90
	10,000	1,840	90
	20,000	5,825	90
	50,000	20,965	90
	100,000	50,855	90
Married taxpayer—no dependants.....	2,200	11	3
	2,500	44	12
	3,000	99	27
	5,000	403	87
	10,000	1,544	90
	20,000	5,375	90
	50,000	20,415	90
	100,000	50,205	90
Married taxpayer—two children eligible for family allowances.....	2,800	11	3
	3,000	33	9
	5,000	301	69
	10,000	1,388	90
	20,000	5,105	90
	50,000	20,085	90
	100,000	49,815	90

The income taxes shown above are abated by 17 p.c. in all provinces. In all provinces except Quebec, Manitoba and Saskatchewan the provincial tax is the same as the federal abatement. Therefore in these provinces the taxes shown above are the combined federal and provincial taxes. In Quebec the provincial tax does not coincide with the federal abatement. In Manitoba and Saskatchewan the provincial tax exceeds the abatement by 6 p.c.

It was announced in the 1963 Budget Speech that taxpayers who establish a manufacturing or processing business in a designated area of slower growth during a two-year period commencing from the date of enactment of the 1963 Income Tax Act Amending Bill would be eligible for a three-year exemption from income tax. As of July 1963, this proposed change had not been brought into force by legislation nor had any area been designated.

Corporation Income Tax

The Income Tax Act levies a tax upon the income from everywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada

of non-resident corporations carrying on business in Canada. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts and interest on borrowed money. They may not deduct provincial income taxes other than provincial taxes on income derived from mining operations (for this purpose "income from mining operations" is specially defined). However, they can deduct from tax an amount equal to two thirds of a provincial tax on income from logging operations not exceeding two thirds of 10 p.c. of the corporation's income from logging operations in the province.

Regulations covering capital cost allowances (depreciation) permit taxpayers to deduct over a period of years the actual cost of all depreciable property. The yearly deductions of capital cost allowances are computed on the diminishing balance principle (taxpayers engaged in farming and fishing may choose between this and the straight-line method). Published regulations establish a number of classes of property and maximum rates. There is provision for recapture of any amount allowed in excess of the ultimate net capital cost of any asset. Certain accelerated depreciation provisions are available to taxpayers in certain circumstances and for a limited period of time. Businesses established in surplus manpower areas (officially designated) which produce goods new to these areas or businesses engaged in the production of goods that are new to Canada are allowed to claim depreciation at double the normal rates of capital cost allowance for one year in respect of capital expenditures incurred for the purpose of producing these new goods. This special incentive is available until Jan. 1, 1964. A modernization allowance in the form of a 50-p.c. increase in the first year in the rates of capital cost allowance can also be claimed by a business for expenditures on new capital assets which exceed its expenditures on capital assets in the previous year or its average expenditures on capital assets in the three previous years. This special allowance is available in respect of all depreciable assets eligible for depreciation by the diminishing balance principle which are acquired before Apr. 1, 1964. The 1963 Budget introduced a new incentive measure which, as of July 1963, had not yet been brought into force by legislation. Straight-line depreciation at a rate not exceeding 50 p.c. will be granted in respect of certain new depreciable assets (machinery and equipment that would otherwise fall in class 8 of the Income Tax Regulations) acquired in a 24-month period commencing on June 14, 1963, for use in manufacturing or processing businesses by individuals resident in Canada or by companies resident in Canada that have a degree of Canadian ownership and control. To have a degree of Canadian ownership and control, a company must (a) be a resident of Canada, (b) have 25 p.c. of its voting shares beneficially owned by one or more individuals resident in Canada, one or more corporations controlled in Canada, or a combination thereof or have its voting shares listed on a stock exchange in Canada and have no more than 75 p.c. of its voting shares beneficially owned by a non-resident person alone or with associated persons, (c) ensure that at least 25 p.c. of its directors are resident in Canada (this requirement will not apply until 1965). For manufacturing or processing businesses in designated areas of slower growth there is no requirement that they have a degree of Canadian ownership and control to qualify for this 50-p.c. straight-line depreciation rate.

Expenditures on scientific research by corporations qualify for special tax treatment. Generally speaking, all expenditures on scientific research in Canada may be written off for tax purposes in the year when incurred. In addition, corporations are permitted to deduct from income for tax purposes 150 p.c. of their increased expenditures on scientific research.

Taxpayers operating mines, oil wells and gas wells are allowed a depletion allowance, usually computed as a percentage of profits derived from mineral, oil or gas production, which continues as long as the mine or well is in operation. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer. Taxpayers operating timber limits receive an annual allowance sometimes called a depletion allowance. This is a rateable proportion of the amount invested in the limit and is based on the amount of timber cut in the year. When the amount invested in the limit has been recovered no further allowance is given.

In computing taxable income, corporations may deduct dividends received from other Canadian taxpaying corporations and also from foreign corporations in which the Canadian corporation has at least 25 p.c. stock ownership. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 10 p.c. of their income.

The general rates of tax on corporate taxable income are 18 p.c. on the first \$35,000 of taxable income plus 47 p.c. on taxable income in excess of \$35,000. Corporations deriving more than one half of their gross revenue from the sale of electric energy, gas, or steam pay tax on their taxable income from such sources at the rate of 18 p.c. on the first \$35,000 of taxable income plus 45 p.c. on taxable income in excess of \$35,000. Corporations that qualify as investment companies pay a tax of 18 p.c. on their taxable income. In addition to these rates, all corporations pay an old age security tax of 3 p.c. of taxable income bringing their rates up to 21 p.c. and 50 p.c. (21 p.c. and 48 p.c. for public utility companies and 21 p.c. for investment companies).

In calculating the amount of their income tax, corporations are allowed tax credits under two headings: (1) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income; and (2) *Abatement under Federal-Provincial Arrangements*—corporations may deduct from their federal tax otherwise payable a tax abatement equal to a fixed percentage of their taxable income attributable to operations in a Canadian province. This abatement is to make room for the provincial income tax levied by each Canadian province. The amount of the abatement is 9 p.c. of taxable income attributable to operations in any province except Quebec and 10 p.c. of taxable income attributable to operations in Quebec.

A special tax incentive based upon increased sales is available to corporations engaged in manufacturing or processing. This concession consists of cancellation of 50 p.c. of the federal income tax on the first \$50,000 of taxable income arising from increased sales and cancellation of 25 p.c. of the tax on any additional taxable income arising from increased sales. It was announced in the 1963 Budget Speech that this incentive would not be available for the 1964 and subsequent taxation years.

It was announced in the 1963 Budget Speech that new manufacturing and processing businesses established in designated areas of slower growth during a two-year period commencing from the date of enactment of the 1963 Income Tax Act Amending Bill would be eligible for a three-year exemption from income tax. As of July 1963, this proposed change had not been brought into force by legislation nor had any area been designated.

Corporations are required to pay their tax (combined income and old age security tax) in monthly instalments but the period during which they pay tax for a taxation year does not coincide exactly with that taxation year. Until 1963, corporations did not start to pay taxes for a taxation year before the seventh month of that taxation year. In each of the last six months of their taxation year and the following three, they paid one twelfth of their estimated tax for the year (such estimate being based either on the taxable income of the previous year or the estimated taxable income of the year in progress). In each of the following two months they paid one third of the estimated balance of the tax computed by reference to the income of the taxation year. In the sixth month following the end of their taxation year, the final return had to be filed and the remainder of the tax paid for the year. The 1963 Budget introduced a new set of rules for the payment of corporation income tax which will not become fully operative until early 1966. These rules will require that corporations begin to pay their tax for a taxation year in the fifth month rather than in the seventh month of that taxation year. In each of the last eight months of their taxation year and the following two, they will pay one twelfth of their estimated tax for the year (such estimate will continue to be based on the taxable income of the previous year or the estimated taxable income of the year in progress). In each of the following two

months, they will pay one half of the estimated balance of the tax computed by reference to the income of the taxation year. In the sixth month following the end of their taxation year, the final return will have to be filed. In order to move on to the new pattern, it will be necessary for corporations to pay their tax for each of two taxation years within a payment period of eleven months. The first taxation year to be so compressed within eleven months for the purpose of moving forward the payment period of corporation income tax will be the first one to end after Nov. 30, 1963. The second will be the immediately succeeding one. As of July 1963, this proposed change had not been brought into force by legislation.

Taxation of Non-residents

A non-resident is liable for payment of income tax if he was employed or was carrying on business in Canada during a taxation year. The expression "carrying on business in Canada" includes: (1) maintaining a permanent establishment in Canada; (2) processing goods even partially in Canada; and (3) entering into contracts in Canada. The taxable income of a non-resident individual derived from carrying on business in Canada or from employment in Canada is taxed under the same schedule of rates as Canadian resident individuals, and non-resident corporations deriving income from carrying on business in Canada are taxed on their taxable income attributable to operations in Canada at the same rates as Canadian resident corporations. (Tax treaties with some countries provide certain exemptions from tax for remuneration for services performed in Canada by residents or employees of these countries.)

Furthermore, the Income Tax Act provides for a tax at the rate of 15 p.c. on certain forms of income going from Canada to non-resident persons. It applies to interest, dividends, rentals, royalties, income from a trust or estate and alimony. This tax applies whether the income goes to non-resident individuals or corporations. The rate on royalties on motion picture films is only 10 p.c. The 1963 Budget announced that the 15-p.c. rate on dividends paid by companies resident in Canada to non-resident persons would be reduced to 10 p.c. when paid by a company that has a degree of Canadian ownership and control (see p. 968). This change would be effective for dividends paid after June 13, 1963. At the same time, the 1963 Budget announced that the 15-p.c. rate on dividends paid by companies resident in Canada to non-resident persons would be increased to 20 p.c. effective from Jan. 1, 1965, when paid by a company that has not a degree of Canadian ownership and control. As of July 1963, these proposed changes had not been translated into legislation.

The non-resident tax is withheld at the source by the Canadian payer. It is an impersonal tax levied without regard to the status or other income of the non-resident recipient. Non-residents who receive only this kind of income from Canada do not file returns in Canada.

Special Tax on Branch Businesses

Profits earned in Canada by a non-resident corporation carrying on business through a branch or permanent establishment in Canada are subject to an additional tax of 15 p.c. This tax is imposed on profits attributable to the branch after deducting therefrom Canadian federal and provincial income taxes and an allowance in respect of the net increase in capital investment in property in Canada. The 1963 Budget announced that the rate of this tax would be increased to 20 p.c., effective from Jan. 1, 1965. As of July 1963, this proposed change had not been translated into legislation.

Gift Tax

The Income Tax Act levies a tax upon gifts. The rates range from 10 p.c. on an aggregate taxable value of \$5,000 or under to 28 p.c. on an aggregate taxable value of over \$1,000,000. Exemptions include complete exemption of gifts of \$1,000 or less and a general deduction of \$4,000 from aggregate taxable value of gifts in the year.

Estate Tax

This tax applies to property passing, or deemed to pass, at death. All the property of persons who were domiciled in Canada before their death must be taken into consideration no matter where that property is situated; for persons dying domiciled outside of Canada, only their property situated in Canada is subject to tax.

In computing the tax of a Canadian domiciliary, the value of the whole estate is first determined. Once the aggregate value of the estate has been determined, estate debts and certain expenses may be deducted. From the resulting "aggregate net value", there may be deducted the amount of a basic exemption, which is increased where the deceased leaves a widow or dependent child, and also the amount of any bequests to charitable organizations in Canada. After these deductions, the amount remaining is the "aggregate taxable value" to which is applied the tax rates. From the tax so calculated may be deducted: (1) a tax abatement in respect of property situated in a province that levies a succession duty; (2) a credit for gift tax paid on gifts made within three years of death (the value of which must be included in the aggregate net value of the estate); and (3) a credit for foreign taxes.

No estate valued at less than \$50,000 is subject to estate tax. This \$50,000 is not an exemption but the starting point for tax. The estate tax must not reduce the value of an estate after tax to less than \$50,000. The basic deductible exemption which applies to all estates of Canadian domiciliaries is \$40,000. This basic exemption of \$40,000 is increased to \$60,000 in respect of a deceased male survived by a spouse, or in respect of a deceased female survived by an incapacitated spouse and a dependent child. In both cases, there is an additional exemption of \$10,000 for each surviving dependent child (under 21). Finally, the basic exemption of \$40,000 is increased by \$15,000 for every surviving dependent child made an orphan by the death of the deceased.

The tax on the estates of Canadian domiciliaries is calculated by applying a graduated scale of rates. For an aggregate taxable value of \$5,000 or less the rate is 10 p.c., for an aggregate taxable value of \$100,000 the tax is \$19,000, and anything between \$100,000 and \$150,000 is taxed at 24 p.c. At \$2,000,000 of taxable value the tax is \$816,500 and the excess over \$2,000,000 is chargeable at the highest rate of 54 p.c.

As already stated, there is an abatement from federal estate taxes otherwise payable, in respect of provincial succession duties. Generally, the abatement is a deduction of 50 p.c. from the federal tax otherwise payable in respect of property situated in a province that levies succession duties.

The property situated in Canada of a deceased person not domiciled in Canada is subject to estate tax at a flat rate of 15 p.c. No deduction is allowed against the assessed value of such property except for debts specifically chargeable to it. However, there is a special provision that exempts all such property of less than \$5,000 value and also provides that the tax must not reduce the value of the property to less than \$5,000. (The Estate Tax Convention between Canada and the United States increases this figure to \$15,000.) Where property is subject to provincial duties the 15-p.c. tax is abated by 50 p.c.

Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. These taxes are levied on goods imported into Canada and on goods produced in Canada but are not levied on goods exported.

General Sales Tax.—An 8-p.c. sales tax is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. For alcoholic beverages and tobacco products the sale price for purposes of the sales tax includes excise duties levied under the Excise Act referred to below. An old age security tax of 3 p.c. is levied on the same basis as the 8-p.c. tax, bringing the total sales tax to 11 p.c.

Many classes of goods are exempt from sales tax. Foodstuffs and fuels for lighting or heating are generally exempt as well as articles and materials used by public hospitals, the products of farms, forests, mines and fisheries, and most equipment used in farming and fishing. Also a variety of items are exempt when purchased by municipalities.

It was announced in the 1963 Budget that the application of the federal sales tax would be extended to building materials and production machinery which had previously been exempt, the proposed change to take place by stages. The rate applicable between June 13, 1963 and Apr. 1, 1964 will be 4 p.c.; it will rise to 8 p.c. on Apr. 1, 1964 and to the full 11 p.c. (the 3-p.c. old age security rate being the last one to be added) on Jan. 1, 1965. As of July 1963, this proposed change had not been translated into legislation.

Special Excise Taxes.—The Excise Tax Act provides for a number of special excise taxes which are in addition to the sales tax. Where these are ad valorem taxes they are levied on exactly the same price or duty-paid value as the general sales tax. Articles subject to special excise taxes include jewellery, cosmetics, toilet articles, radios, record players and television sets. Tobacco products and wines are also taxed under the Excise Tax Act.

The special excise taxes levied at present are listed as follows:—

Cigarettes.....	2½ cents per 5 cigs.
Cigars.....	15 p.c. ad valorem
Jewellery, including clocks, watches, jewellery, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink.....	10 p.c. ad valorem
Lighters.....	the greater of 10 cents per lighter or 10 p.c. ad valorem
Playing cards.....	20 cents per pack
Radios.....	the greater of \$2 per radio or 15 p.c. ad valorem
Phonographs and television sets.....	15 p.c. ad valorem
Tubes for radios, phonographs and television sets, not including television picture tubes, priced under \$5 per tube.....	the greater of 10 cents per tube or 15 p.c. ad valorem
Television set picture tubes.....	15 p.c. ad valorem
Slot machines—coin, disc or token-operated games or amusement devices.....	10 p.c. ad valorem
Matches.....	10 p.c. ad valorem
Tobacco—pipe tobacco, cut tobacco and snuff.....	80 cents per lb.
Tobacco pipes, cigar and cigarette holders and cigarette rolling devices.....	10 p.c. ad valorem
Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc..	10 p.c. ad valorem
Wines—*	
Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume	25 cents per gal.
Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume but not more than 40 p.c. proof spirit.....	50 cents per gal.
Sparkling wines.....	\$2.50 per gal.
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies.....	10 p.c. of net premium for property, surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

* These taxes apply only to wines manufactured in Canada. The customs tariff on wines includes a levy to correspond to these taxes on domestic production.

All the foregoing items, except the last, are also subject to the general sales tax of 8 p.c. and the old age security tax of 3 p.c. Cigarettes, cigars and tobacco are subject to further taxes under the Excise Act (referred to as excise duties).

Excise Duties

The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages and tobacco products produced in Canada. These duties are not levied on imported goods but the customs tariff on these products includes a levy to correspond to the duties levied on domestic production. These duties are not levied on goods exported.

Spirits.—The duties are on a per-gallon basis in proportion to the strength of proof of the spirits. These duties do not apply to denatured alcohol intended for use in the arts and industries, or for fuel, light or power, or for any mechanical purpose. The various duties are as follows:—

On every gallon of the strength of proof distilled in Canada.....	\$13.00
On every gallon of the strength of proof used in the manufacture of—	
Medicines, extracts, pharmaceutical preparations, etc.....	\$1.50 per gal.
Approved chemical compositions.....	15 cents per gal.
Spirits sold to a druggist and used in the preparation of prescriptions.....	\$1.50 per gal.
Imported spirits when taken into a bonded manufactory in addition to other duties.....	30 cents per gal.

Canadian Brandy.—Canadian brandy is a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials. It is subject to a duty of \$11 per gal.

Beer.—All beer or other malt liquor is subject to a duty of 38 cents per gal.

Tobacco, Cigars and Cigarettes.—The excise duties make up nearly as large a part of the total tax on tobacco products as the special excise taxes which have already been described. The rates of duty are as follows:—

On manufactured tobacco of all descriptions, except cigarettes.....	35 cents per lb.
Cigarettes weighing not more than 3 lb. per thousand (nearly all of the cigarettes used in Canada are of this type).....	\$4.00 per thousand
Cigarettes weighing more than 3 lb. per thousand.....	\$5.00 per thousand
Cigars.....	\$2.00 per thousand
Canadian raw leaf tobacco when sold for consumption.....	10 cents per lb.

Combined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act gives the following total taxes:—

Cigarettes.....	\$9.00 per thousand (or 18 cents per pack of 20 cigarettes) plus the 11-p.c. sales tax on the manufacturer's sale price
Manufactured tobacco.....	\$1.15 per lb. plus the 11-p.c. sales tax on the manufacturer's sale price
Cigars.....	\$2.00 per thousand plus the 15-p.c. special excise tax and the 11-p.c. sales tax on the manufacturer's sale price.

Customs Duties*

Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties, which once were the chief source of revenue for the country, have declined in importance as a source of revenue to the point where they provide less than 10 p.c. of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly

* See also pp. 946-947.

to Canada from countries within the British Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to either the Preferential or Most-Favoured-Nation treatment. Few countries are in this category and in terms of trade coverage are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates which apply on any particular item may be obtained from the Department of National Revenue which is responsible for administering the Customs Tariff.

Subsection 2.—Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the revenue necessary for provincial purposes. All provinces levy a tax on the income of individuals and corporations resident within their boundaries deriving income from activities or operations carried out therein. Only the Provinces of Ontario and Quebec impose special taxes on corporations and only the Provinces of Ontario, Quebec and British Columbia impose a tax on property passing at death. Under the terms of the existing federal-provincial fiscal arrangement, the Federal Government makes payments called "equalization payments" to some provinces in recognition of the fact that the potential tax revenue from the fields of income tax, death duties and natural resource revenue in those provinces, measured on a per capita basis, is lower than an agreed upon level. For some provinces these payments constitute a very important source of revenue.

Some of the more important provincial levies are reviewed briefly below.

Individual Income Tax

All provinces levy a tax on the income of individuals who reside within their boundaries or who earn income therein. In nine of the ten provinces, these taxes are computed as a percentage of federal income tax otherwise payable at full federal rates and are collected by the Federal Government on behalf of these provinces. In Quebec, provincial income tax is levied at graduated rates that progress from 2.5 p.c. on the first \$1,000 of taxable income to a maximum of 13.2 p.c. on the excess over \$400,000. The determination of taxable income for Quebec tax is based on exemptions and deductions similar to those for federal tax. The Province of Quebec collects its own tax.

The percentages that provincial income tax liability is of federal income tax liability computed at full federal rates for 1963 are: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia each 17 p.c., Quebec approximately 18 p.c. and Manitoba and Saskatchewan each 23 p.c.

Corporate Income Tax

All provinces levy a tax on the profits of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec the provincial

tax is imposed on taxable income in the province determined on the same basis as for federal income tax. In Ontario and Quebec the determination of taxable profits for purposes of provincial tax follows closely the federal rules. The rate of tax in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Alberta and British Columbia is 9 p.c. of corporate taxable income. The rate that applies in Manitoba and Saskatchewan is 10 p.c., in Ontario 11 p.c. and in Quebec 12 p.c.

Four of the ten provinces levy corporate income taxes at rates in excess of the abatement allowed by the Federal Government. This abatement is equal to 9 p.c. of corporate profits except in Quebec where it is 10 p.c. (see p. 965). All provinces except Ontario and Quebec have signed agreements for the collection of their income taxes by the Federal Government.

Alcoholic Beverages and Tobacco

Generally speaking, the sale of spirits in all provinces is made through provincial agencies operating as boards or commissions which exercise monopolistic control over alcoholic beverages. The provincial mark-up over the manufacturer's price is the effective means of revenue. Beer and wine may be sold by retailers or government stores depending on the province but in all cases they contribute to provincial revenues.* The Province of Prince Edward Island imposes a tax of 10 p.c. on all beer, wine and spirits sold at retail collected under authority of the Health Tax Act.

Prince Edward Island also imposes a tax on tobacco sold at retail: one fifth of one cent per cigarette purchased; from one to three cents per cigar, depending on price; and 10 p.c. of the retail price of all other tobacco purchased. Specific sales taxes on tobacco products are also levied in New Brunswick, Quebec and Manitoba.

Retail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. Eight provinces now levy this type of tax at rates varying from 3 p.c. to 5 p.c. These provinces are Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan and British Columbia. In the Province of Quebec, the general rate is 4 p.c. but the province allows its municipalities to levy an additional 2 p.c. for municipal purposes.

Amusement Taxes

Each of the provinces with the exception of Alberta, Saskatchewan and British Columbia has a tax on admission to places of entertainment. In addition, there is generally a licence fee imposed on the operator or owner of these amusement places. The tax on admissions is within the range of 5 p.c. to 13 p.c.

Gasoline and Diesel Fuel Oil Taxes

Each of the ten provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 12 cents per gallon in Alberta to 19 cents in Nova Scotia and Newfoundland. The amount of tax borne by one gallon of motor vehicle fuel in each province is as follows:—

	Gasoline	Diesel Fuel		Gasoline	Diesel Fuel
	cts.	cts.		cts.	cts.
Newfoundland.....	19	19	Ontario.....	13	18.5
Prince Edward Island	18	18	Manitoba.....	14	17
Nova Scotia.....	19	27	Saskatchewan.....	14	17
New Brunswick.....	18	23	Alberta.....	12	14†
Quebec.....	15	21	British Columbia...	13	15

* The provincial mark-up over the manufacturer's price is not considered a "tax" in DBS financial statistics, but forms part of the "profits of government business enterprises" (see p. 960).

† Generally, fuel oil used for agricultural and industrial purposes is exempt from tax.

Motor Vehicle Licences and Fees

Each province also levies a fee on the annual registration of motor vehicles. This registration is compulsory and each vehicle is issued with licence plates for the year. The rates of this licence fee vary from province to province. The amount to be paid may be assessed in relation to the weight of the car, the number of cylinders of the engine, the age of the vehicle and the wheel base, or at a flat rate. The operator or the driver of a motor vehicle must also register annually and pay a fee for a new driver's licence; in Alberta and British Columbia, drivers' licences must be renewed every five years at a cost of \$5; in Quebec they must be renewed every two years, also at a cost of \$5. Alberta, in addition to registration fees, imposes a mileage tax on buses, based on mileage operated outside city limits by public service vehicles carrying passengers.

Taxes on Mining Operations

All provinces except Prince Edward Island levy taxes of various kinds on mining operations. All provinces except Prince Edward Island and Alberta impose a tax on the income of firms engaged in mining operations in general or in specific kinds of mining operations. The Provinces of British Columbia, Alberta, Saskatchewan, Manitoba and Ontario impose a tax on the assessed value of minerals or a flat rate per acre of mining property.

Tax on Logging Operations

The Provinces of Ontario, Quebec and British Columbia levy a tax on the income from logging operations of individuals, partnerships, associations or corporations engaged in this activity. In Quebec and Ontario the rate is 10 p.c. on income in excess of \$10,000 and in British Columbia the tax is 10 p.c. on income in excess of \$25,000. In Ontario, one third of the tax is allowed as a deduction from the corporate income tax in the case of corporations, and the remainder is deductible from federal income tax.

Business Taxes

The Province of Quebec imposes a tax of one tenth of 1 p.c. on paid-up capital of corporations while Ontario levies a similar tax at the rate of one twentieth of 1 p.c.

The Provinces of Quebec and Ontario have a place-of-business tax. In Quebec the tax ranges from \$20 to \$50 for each place of business with the higher amounts being levied in the cities of Montreal and Quebec. In Ontario, the tax for each permanent establishment is the lesser of \$50 or one twentieth of 1 p.c. of paid-up capital of the corporation involved, but the total of the capital tax and the place-of-business tax cannot be less than \$20. Ontario also imposes an office tax of \$50 on every corporation that does not maintain a permanent establishment in the province but merely maintains a buying office, or merely holds certain provincial licences, or merely holds assets. A corporation that does not maintain a permanent establishment in Ontario but is represented by a resident employee or agent who is not deemed to operate a permanent establishment of the corporation in the province must pay an office tax of \$50 or one tenth of 1 p.c. of the total amount of its gross Ontario sales or revenue if less than \$50,000, subject to a minimum office tax of \$5.

Both provinces levy special taxes on certain kinds of companies such as banks, railway companies, express companies, trust companies and sleeping-car, parlour-car and dining-car companies. In Ontario these special taxes (except the tax payable by insurance corporations calculated on gross premiums) and the capital and place-of-business taxes are payable only to the extent that they exceed the corporate income tax otherwise payable.

The Province of Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to other incorporated companies, the latter being similar to filing fees in other provinces.

Land Transfer Taxes

The Provinces of Alberta and Ontario levy a tax based on the price at which ownership of land is transferred. In Ontario a straight one fifth of 1 p.c. tax is imposed. In Alberta, registration fees proportionate to the conveyancing services rendered are charged and in the case of transfers and mortgages the fees are assessed on the value of the land transferred or the amount of the mortgage. In addition, there is an Assurance Fund fee charged on transfers and mortgages which guarantees title in certain circumstances. The registration fee on transfers is one half of 1 p.c. up to \$1,000, one tenth of 1 p.c. from \$1,000 to \$25,000, and one twentieth of 1 p.c. over \$25,000; the Assurance Fund fee is one fifth of 1 p.c. up to \$5,000 and one tenth of 1 p.c. thereafter. The registration fee on a mortgage is \$3 up to \$1,000, one tenth of 1 p.c. from \$1,000 to \$50,000 and one twentieth of 1 p.c. thereafter. The Assurance Fund fee on a mortgage is one fortieth of 1 p.c.

In Quebec, a tax of 2½ p.c. of the purchase price is imposed only when property is transferred under the Bankruptcy or Winding-Up Acts. The Provinces of British Columbia, Saskatchewan and Manitoba do not have a land transfer tax but have an equivalent in the land title fees which are based on land values.

Tax on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities transferred; the rates in each province are:—

Shares sold, transferred or assigned valued at—	
Under \$1.....	1/10th of 1 p.c. of value
\$ 1 to \$ 5.....	1/4 cent per share
\$ 5 to \$ 25.....	1 cent per share
\$25 to \$ 50.....	2 cents per share
\$50 to \$ 75.....	3 cents per share
\$75 to \$150.....	4 cents per share
Over \$150.....	4 cents per share plus 1/10th of 1 p.c. of value in excess of \$150
Bonds and debentures.....	
	3 cents for every \$100 or fraction thereof of par value.

Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies relative to risks incurred in the province.

Succession Duties

Only the Provinces of Ontario, Quebec and British Columbia levy succession duties. These duties are a tax upon the right to succeed to property and are assessed upon the interest or benefit passing at death to an heir or beneficiary. The three provinces impose succession duties on all property situated in the province belonging to the deceased and passing at his death whether the deceased was domiciled in the province or elsewhere. Personal property wherever situated of a person dying domiciled within the province is also liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are governed by the value of the estate, the relationship of the beneficiary to the deceased and the amount going to any one person. The rate of tax increases as the degree of relationship between the deceased and his successor becomes more remote.

Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes at varying rates according to class for provincial revenue. Improved, forest and tree-farm lands are taxed at 1 p.c. of assessed value; farm land at one half of 1 p.c.; wild land at 3 p.c.; coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at 1½ p.c. In unorganized (non-municipal) areas, Ontario levies a property tax of 1½ p.c. of assessed value. The minimum annual tax in respect of any land is \$6. Nova Scotia and New Brunswick also impose property taxes of limited application.

Race Tracks Tax

Ontario levies a tax upon operators of race meets and upon holders of winning tickets issued under the pari-mutuel system. The tax on race meeting operators is imposed at the rate of \$1 for each day the meet is conducted. Holders of winning tickets must pay a tax equal to 6 p.c. upon the amount which would be payable to them if no percentage were deducted by the person holding the race meeting. Alberta levies a pari-mutuel tax of 5 p.c. on money bet in the province on horse races.

Subsection 3.—Municipal Taxes

The municipalities in Canada levy taxes on the owners of property situated within their jurisdiction according to the assessed value of such property. Methods of determining assessed value vary widely but for taxation purposes it is generally considered to be a percentage of the actual value. The revenues from such taxes are used to pay for street maintenance, schools, police and fire protection, snow removal in certain communities and other community services. Special levies are sometimes made on the basis of street frontage to pay for local improvements to the property such as sidewalks, roads and sewers. Not only is there a widespread difference in the bases used for property tax but there is also a wide variety of rates applied depending on the municipality.

In addition to the taxes described above, municipalities usually impose a charge for the water consumption of each property holder or a water tax based upon the rental value of the property occupied. There are no municipal income taxes although certain localities have retained the use of a poll tax. In Newfoundland, Quebec and Saskatchewan municipalities are empowered to levy an amusement tax on the admission of persons to places of entertainment, although the amusement tax is generally a provincial preserve (see p. 975). Electricity and gas are taxed at the consumer level in some western municipalities while coal and fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Telephone subscribers are subject to a special levy in Montreal and certain Ontario municipalities impose a tax on the gross receipts of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a business. In general, business tax rates are lower than those applying to property. Three bases of assessment are in use—a fraction of the property assessment, the annual rental value of the premises, or the area of the premises. Certain municipalities may charge a licence fee instead of a business tax while others charge both a licence fee and business tax. In Nova Scotia, all but one of the municipalities tax personal property (stock in trade, equipment, etc.) the same as real property.

Subsection 4.—Miscellaneous Levies

These are not generally referred to as taxes but they are similar to taxes in many ways.

Unemployment Insurance

For the past twenty-three years, a national program of unemployment insurance has been in operation in Canada. Essentially, it provides relief to those qualified persons who temporarily find themselves without work. It is administered by a federal commission appointed for this purpose and financed by equal contributions from employers and employees plus a contribution from the Federal Government. The amount paid into the fund by employee and employer is directly proportional to the weekly wages of the employee. The rates of contributions, together with statistics on the operation of the program, are given at pp. 731-736.

Workmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered by workmen as a result of industrial accidents. In general, these provincial statutes

establish an accident fund administered by a Board to which employers are required to contribute at a rate proportional with the hazards of the industry. See also pp. 744-745.

Hospital Insurance

A federal-provincial hospital insurance plan has been adopted by each of the ten Canadian provinces. Under this arrangement, the Federal Government pays approximately one half of the cost of hospitalization for patients who are participants under the plan. The provinces meet the remainder of the cost. Provincial revenues for this purpose are raised by various means. The Province of Quebec has increased its personal and corporation income tax. Certain provinces require the deduction of a monthly premium from the wages of their residents as a contribution or premium for the plan. In such provinces non-salaried people must also pay the premium directly if they wish to be covered by the plan. In some other provinces the proceeds of a retail sales tax are earmarked in whole or in part for the support of the hospital plan. See also pp. 262-265.

Section 3.—Federal Government Finance

Subsection 1 of this Section contains financial statistics of the Federal Government prepared as far as possible in accordance with the classifications, concepts and definitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the *Public Accounts of Canada*. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The *Public Accounts of Canada* presentation is retained for continuity and also because there is interest in and use for information on this basis.

Subsection 1.—DBS Statistics of Federal Government Finance

Revenue and Expenditure.—Table 4 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1961 and 1962.

4.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1961 and 1962

Source	1961	1962	Source	1961	1962
	\$'000	\$'000		\$'000	\$'000
Taxes—			Privileges, Licences and Permits—		
Income—			Natural resources.....	4,166	3,805
Corporations ¹	1,380,128	1,302,179	Other.....	19,170	20,585
Individuals ¹	1,940,560	2,051,606	Sales and services other than institutional.....	57,030	64,000
Interest, dividends and other income going abroad.....	88,174	112,306	Fines and penalties.....	1,877	1,338
General sales ¹	990,848	1,044,557	Exchange fund profits.....	32,536	32,606
Excise Duties and Special Excise Taxes—			Receipts from government enterprises.....	108,155	122,427
Alcoholic beverages.....	199,109	206,277	Bullion and coinage.....	8,676	8,144
Tobacco.....	342,675	367,386	Postal service.....	202,004	213,579
Automobiles.....	59,627	25,270	Other revenue.....	9,720	9,975
Other.....	31,805	24,703	Non-revenue and surplus receipts.....	41,145	18,477
Customs import duties.....	498,698	534,516			
Succession duties and estate taxes.....	84,879	84,579			
Other.....	1,622	1,043			
Totals, Taxes.....	5,618,125	5,754,422	Totals, Net General Revenue.....	6,102,604	6,249,358

¹ Includes old age security taxes.

Table 5 gives details of expenditure by function for the years ended Mar. 31, 1961 and 1962 and Table 6 gives details of the amounts paid by the Federal Government to provincial governments and municipal corporations in the same years.

**5.—Details of Net General Expenditure of the Federal Government, Years Ended
Mar. 31, 1961 and 1962**

Function	1961	1962	Function	1961	1962
	\$'000	\$'000		\$'000	\$'000
Defence services and mutual aid.....	1,536,011	1,648,584	Education—		
Veterans' pensions and other benefits.....	296,071	337,318	Indian and Eskimo schools..	34,740	35,685
General Government—			Universities, colleges and other schools.....	27,611	55,408
Executive and administrative.....	244,824	252,767	Other.....	2,129	2,476
Legislative.....	9,708	9,547	Totals, Education.....	64,480	93,569
Research, planning and statistics.....	11,071	24,803	Natural Resources and Primary Industries—		
Totals, General Government.....	265,603	287,117	Fish and game.....	19,729	23,197
Protection of Persons and Property—			Forests.....	10,422	15,016
Law enforcement.....	7,577	8,171	Land, settlement and agriculture.....	268,980	294,514
Corrections.....	17,793	22,299	Minerals and mines.....	42,197	45,956
Police protection.....	45,167	48,630	Water resources.....	1,944	2,353
Other.....	8,650	9,021	Other.....	22,841	22,287
Totals, Protection of Persons and Property.....	79,187	88,121	Totals, Natural Resources and Primary Industries.....	366,113	403,323
Transportation—			Trade and industrial development.....	11,169	13,553
Air.....	88,130	95,866	National Capital area planning and development.....	13,087	16,794
Road.....	104,964	88,557	Loss on foreign exchange.....	—908	—2,095
Rail.....	43,455	90,522	Debt Charges (excluding debt retirement)—		
Water.....	107,561	115,595	Interest.....	613,473	653,382
Other.....	3,060	3,338	Other.....	40,938	36,067
Totals, Transportation.....	347,170	393,878	Totals, Debt Charges (excluding debt retirement)	654,411	689,449
Communications — telephone, telegraph and wireless.....	29,835	36,403	Payments to government enterprises.....	149,158	170,931
Health—			Payments to Provincial Governments—		
General.....	4,587	5,780	Tax-sharing arrangements...	480,873	479,269
Public.....	34,080	35,036	Share of income tax on power utilities.....	4,226	6,396
Medical, dental and allied services.....	6,916	7,937	Subsidies.....	53,718	56,556
Hospital care.....	221,639	317,153	Grants to Municipal Governments in lieu of taxes.....	24,722	25,034
Totals, Health.....	267,222	365,906	Totals, Payments to Provincial and Municipal Governments ²	563,539	567,255
Social Welfare—			Citizenship and immigration..	16,232	16,393
Aid to aged persons ¹	623,070	656,065	External affairs.....	18,106	19,965
Aid to blind persons.....	4,221	4,194	International co-operation and assistance.....	81,820	67,396
Aid to unemployed employables and unemployables..	67,906	108,478	Housing research and slum clearance.....	3,005	4,111
Family allowances.....	509,396	523,917	Civil defence.....	5,336	7,586
Labour.....	2,808	3,075	Postal service.....	206,694	214,804
National employment and unemployment insurance services.....	99,097	102,964	Royal Canadian Mint.....	1,471	1,714
Other.....	21,477	25,230	Other.....	105,525	124,359
Totals, Social Welfare.....	1,327,975	1,423,923	Non-expense and Surplus Payments.....	520	293
Recreational and Cultural Services—			Totals, Net General Expenditure.....	6,435,440	7,022,623
Archives, art galleries, museums and libraries.....	2,873	3,313			
Parks.....	16,019	20,446			
Other.....	7,716	8,214			
Totals, Recreational and Cultural Services.....	26,608	31,973			

¹ Includes pensions paid from the Old Age Security Fund. ² Unconditional payments; grants for specific purposes are classified by function. See Table 6 for details of all grants to provincial governments and municipal corporations.

Year, Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Prov- inces	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1961														
Provincial Governments														
Tax-sharing arrangements.....	20,480	4,802	32,243	26,749	70,386	113,792	40,078	40,578	57,146	73,686	479,900	435	538	480,873
Share of income tax on power utilities.....	130	42	346	115	1,221	578	27	58	1,449	260	4,226	—	—	4,226
Subsidies.....	17,069	3,157	9,357	9,179	3,242	3,641	2,054	2,092	2,358	1,281	53,630	40	48	53,718
Grants-in-Aid and Shared-Cost Contributions—														
Trans-Canada Highway.....	6,570	551	3,257	3,461	—	17,869	542	34	268	16,135	48,696	—	—	48,696
Roads leading to resources.....	798	1,466	1,064	784	322	1,504	1,602	1,940	1,536	1,984	12,000	—	—	12,000
Other transportation.....	—	—	716	254	—	1,878	365	333	—	1,515	5,526	—	—	5,526
Hospital insurance and diagnostic services.....	5,095	1,011	9,995	7,914	13,337	84,484	13,049	14,454	16,906	22,493	188,958	169	262	189,369
General Health Grants—														
Hospital construction.....	71	169	1,323	397	4,956	6,999	1,201	803	322	1,354	17,595	—	—	17,595
General public health.....	327	123	751	461	2,636	2,617	704	675	986	1,192	10,472	—	—	10,521
Tuberculosis control.....	126	29	146	157	1,274	785	177	151	211	286	3,342	22	12	3,376
Mental health.....	210	99	372	313	2,417	2,622	406	395	631	656	8,121	20	—	8,141
Cancer control.....	23	12	42	62	915	1,039	181	186	252	305	3,017	—	—	3,020
Public health research.....	—	—	48	—	594	578	44	50	82	63	3,050	—	—	3,141
Other general health grants.....	88	15	193	192	1,208	1,115	283	226	264	287	3,871	—	—	3,871
Other health.....	2	2	16	5	52	32	6	4	8	7	134	—	—	149
Old age assistance.....	1,708	217	1,008	1,747	10,977	6,629	1,601	1,770	2,009	2,332	30,598	16	15	30,657
Blind persons' allowances.....	208	40	381	342	1,457	841	187	196	221	269	4,192	—	—	4,192
Disabled persons' allowances.....	389	231	848	634	7,996	4,163	455	464	556	643	16,376	1	19	16,386
Unemployment assistance.....	2,533	111	1,609	1,396	14,165	12,916	3,277	2,270	2,556	10,313	51,446	54	20	51,520
Other social welfare.....	10	3	14	18	1	98	25	27	19	10	225	—	—	225
Campground and picnic area development.....	70	10	52	71	10	930	181	182	266	410	2,182	—	9	2,200
Vocational training.....	235	25	594	992	41	3,292	533	910	922	882	8,426	11	16	8,453
Other education.....	—	—	9	—	2	184	12	12	2	21	241	—	—	241
Forests.....	67	24	62	625	465	650	170	138	329	912	3,441	—	—	3,442
Lands—settlement and agriculture.....	150	85	146	114	1,004	103	554	356	1,111	181	3,784	—	—	3,784
Other natural resources.....	19	49	118	37	123	33	58	40	—	28	605	—	—	605
Other.....	85	14	375	289	1,686	3,272	383	931	1,960	2,220	11,215	3	—	11,218
Totals, Grants-in-Aid, etc.....	19,093	4,286	23,339	20,265	66,703	154,633	25,976	26,546	31,417	63,498	435,756	306	461	436,526
Totals, Paid to Provincial Governments	56,752	12,287	65,485	56,308	141,532	272,644	68,135	69,374	92,370	138,725	973,512	781	1,050	975,343
Municipal Corporations														
Grants in lieu of taxes on federal property.....	147	102	2,135	1,075	4,872	9,937	1,454	846	1,590	2,443	24,601	38	83	24,722
Special grants.....	—	—	—	1,800	—	207	—	—	—	—	1,807	—	—	1,807
Grants-in-Aid and Shared-Cost Contributions—														
Transportation.....	5	—	4	147	489	3,017	297	170	301	192	4,622	—	—	4,622
Health.....	—	—	—	—	—	381	—	—	—	—	381	—	—	381
Schools operated by local authorities.....	—	—	—	—	187	234	57	180	401	634	1,750	—	—	1,750
Other.....	—	—	329	—	—	1,511	—	—	—	41	1,881	—	—	1,881
Totals, Paid to Municipal Corporations	152	102	2,525	2,822	5,548	15,287	1,808	1,196	2,292	3,310	35,042	38	83	35,463
Grand Totals, 1961.....	56,904	12,389	68,010	59,130	147,080	287,931	69,943	70,470	94,662	142,035	1,008,554	819	1,133	1,010,506

6.—Payments by the Federal Government to Provincial Governments and Municipal Corporations, Years Ended Mar. 31, 1961 and 1962

—concluded

Year, Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Prov- inces	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1962														
Provincial Governments														
Tax-sharing arrangements.....	20,078	4,781	32,317	26,233	60,448	120,652	40,411	40,569	58,385	74,382	478,256	446	567	479,269
Share of income tax on power utilities.....	149	54	475	93	2,064	651	63	59	1,870	928	6,396	—	—	6,396
Subsidies.....	17,156	3,157	9,632	9,245	3,964	4,624	2,089	2,116	2,816	1,672	56,471	40	45	56,566
Grants-in-Aid and Shared-Cost Contributions—														
Trans-Canada Highway.....	2,239	300	1,768	2,387	2,703	13,004	857	71	654	12,531	36,484	—	—	36,484
Roads leading to resources.....	800	954	1,765	1,210	426	1,649	1,678	806	1,560	1,152	12,000	—	—	12,000
Other transportation.....	274	—	306	702	127	1,711	—	223	249	512	4,104	—	—	4,104
Health—														
Hospital insurance and diagnostic services	6,258	1,382	11,873	9,547	73,022	104,499	15,246	15,954	19,730	25,698	283,209	296	378	283,883
Hospital construction.....	593	18	1,140	351	4,988	7,620	1,191	1,762	1,328	1,009	19,000	—	—	19,000
General Health Grants—														
General public health.....	360	141	773	480	1,641	2,677	689	659	1,039	1,147	9,606	—	54	9,660
Tuberculosis control.....	144	29	133	126	1,232	779	168	159	215	274	3,215	22	12	3,249
Mental health.....	197	95	370	312	2,476	2,603	426	406	638	693	8,216	22	—	8,238
Cancer control.....	13	15	48	124	480	1,170	181	183	255	313	2,782	—	3	2,785
Public health research.....	—	—	57	—	660	505	95	64	90	59	1,610	—	7	1,617
Other general health grants.....	222	46	162	193	1,647	1,099	285	237	300	409	4,450	—	1	4,451
Other health.....	2	1	9	9	45	36	6	4	7	7	119	—	—	119
Old age assistance.....	1,673	249	1,569	1,760	10,896	6,903	1,652	1,762	2,001	2,284	30,740	16	46	30,811
Disabled persons' allowances.....	414	259	909	668	7,461	4,563	478	460	559	685	16,426	2	6	16,434
Unemployment assistance.....	4,417	173	1,743	1,371	38,222	16,990	4,924	4,176	4,217	16,425	91,968	38	38	92,044
Other social welfare.....	219	43	402	374	1,412	928	117	242	235	287	4,416	2	21	4,439
Campground and picnic area development.....	43	8	32	32	29	648	115	69	195	541	1,700	14	—	1,714
Vocational training.....	2,975	200	1,563	1,563	8,830	11,930	1,145	1,484	3,596	2,825	35,668	37	25	35,730
Other education.....	—	3	—	—	—	133	0	14	2	14	234	230	—	464
Forests.....	69	28	411	735	1,381	879	388	306	740	1,773	6,800	—	—	6,800
Land settlement and agriculture.....	157	278	130	112	2,279	108	1,090	944	156	114	5,368	—	—	5,368
Other natural resources.....	66	97	110	110	229	36	36	40	—	37	704	50	10	704
Other.....	510	27	509	489	11,061	6,422	784	1,285	2,984	3,638	27,689	2	5	27,696
Totals, Grants-in-Aid, etc.....	21,645	4,275	25,366	22,605	170,908	187,063	31,030	30,388	40,750	72,427	606,457	731	606	607,794
Totals, Paid to Provincial Governments	59,028	12,267	67,790	58,176	237,384	312,990	73,583	73,132	103,821	149,409	1,147,580	1,217	1,218	1,150,015
Municipal Corporations														
Grants in lieu of taxes on federal property.....	141	121	2,065	977	3,481	11,831	1,594	886	1,717	2,133	24,946	—	88	25,034
Special grants.....	—	—	—	1,529	—	215	—	—	—	—	1,744	—	—	1,744
Grants-in-Aid and Shared-Cost Contributions—														
Transportation.....	39	—	—	24	166	2,659	22	100	243	142	3,395	—	—	3,395
Health.....	4	—	—	—	—	643	—	—	—	—	647	—	—	647
Schools operated by local authorities.....	—	—	—	—	158	423	261	219	757	304	2,122	—	—	2,122
Other.....	—	—	260	150	1,050	1,460	—	—	—	215	3,135	—	—	3,135
Totals, Paid to Municipal Corporations	184	121	2,325	2,680	4,855	17,231	1,877	1,205	2,717	2,794	35,989	—	88	36,977
Grand Totals, 1962	59,212	12,388	70,115	60,856	242,239	330,221	75,460	74,337	106,538	152,203	1,183,569	1,217	1,306	1,186,092

Debt.—In Table 7, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 8 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1959-62, together with place of payment.

7.—Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at Mar. 31, 1959-62

Nature of Debt	1959	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000
Direct Debt				
Funded Debt—				
Bonded debt.....	13,979,113	13,765,152	14,132,915	15,060,736
Less sinking funds.....	83,214	85,272	17,018	19,432
Net funded debt.....	13,895,899	13,679,880	14,115,897	15,041,304
Short-term treasury bills ¹	1,595,000	2,125,000	1,935,000	1,885,000
Accounts and other payables.....	830,398	967,621	999,076	1,104,607
Annuity, insurance and pension accounts.....	3,301,861	3,565,376	3,955,510	4,258,100
Other liabilities.....	339,638	347,206	363,804	363,403
Totals, Direct Debt (less Sinking Funds).....	19,962,796	20,685,083	21,369,287	22,652,414
Indirect Debt				
Guaranteed bonds or debentures.....	987,907	1,430,107	1,672,690	1,636,115
Less sinking funds.....	—	—	—	—
Net guaranteed bonds or debentures.....	987,907	1,430,107	1,672,690	1,636,115
Guaranteed bank loans.....	139,646	169,203	208,758	168,540
Guaranteed insured loans under National Housing Act, 1954.....	2,054,319	2,671,918	3,017,404	3,640,000
Guarantees under Export Credits Insurance Act.....	54,668	97,456	109,934	291,700
Other guarantees.....	4,980	6,415	7,527	11,300
Totals, Indirect Debt (less Sinking Funds)?.....	3,241,520	4,375,099	5,016,313	5,747,655
Totals, Direct and Indirect Debt (less Sinking Funds).....	23,204,316	25,060,182	26,385,600	28,400,069
	\$	\$	\$	\$
Direct debt (less sinking funds) per capita.....	1,142	1,158	1,172	1,220
Indirect debt (less sinking funds) per capita.....	186	245	275	310

¹ Having a term of three months.

² Excludes deposits of chartered banks in Bank of Canada.

8.—Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1959-62

Item	1959	1960	1961	1962
Bonded debt.....	\$'000 13,979,113	13,765,152	14,132,915	15,060,736
Average interest rate.....	p.c. 3.52	3.74	3.98	4.01
Average term of issue.....	Yrs. 13.32 ²	13.37	13.29	12.19
Place of Payment—				
Canada.....	\$'000 13,777,302	13,563,341	14,002,750	14,930,570
New York.....	" 150,000	150,000	98,175	98,175
London (England).....	" 51,811	51,811	31,990	31,991

Subsection 2.—Public Accounts Statistics of Federal Government Finance

Revenue and Expenditure.—Tables 9 and 10 show details of revenue and expenditure of the Federal Government for the fiscal years ended Mar. 31, 1961 and 1962, as presented in the *Public Accounts of Canada*, and for the year ended Mar. 31, 1963, from the abridged data appearing in the *Canada Gazette*.

9.—Revenue of the Federal Government, Years Ended Mar. 31, 1961-63

SOURCES: *Public Accounts of Canada* and *Canada Gazette*

Revenue	1961	1962	1963
	\$	\$	\$
Tax Revenue—			
Customs import duties.....	498,698,211	534,515,544	644,992,131
Excise duties.....	344,944,857	362,798,655	381,865,989
Income tax.....	3,075,961,775	3,107,015,319	3,056,600,380
Personal ¹	1,711,159,673	1,792,655,915	1,744,626,029
Corporation ¹	1,276,628,380	1,202,053,695	1,182,836,979
On interest, dividends, rents, and royalties going abroad...	88,173,822	112,305,709	129,137,372
Sales tax (net) ¹	720,617,274	759,677,970	805,970,471
Estate tax, including succession duties.....	84,879,372	84,579,383	87,143,312
Other taxes.....	290,675,097	262,577,875	260,405,101
Totals, Tax Revenue.....	5,015,776,586	5,111,164,746	5,236,977,384
Non-tax Revenue—			
Post Office.....	173,593,541	183,678,937	192,771,815
Return on investments ²	283,769,277	307,502,187	311,860,829
Bullion and coinage.....	8,445,677	7,965,169	9,404,342
Other.....	136,094,773	119,312,685	127,678,061
Totals, Non-tax Revenue.....	601,903,268	618,458,978	641,715,047
Grand Totals, Revenue.....	5,617,679,854	5,729,623,724	5,878,692,431

¹ Excludes tax credited to the Old Age Security Fund.
the Bank of Canada.

² Includes interest on investments and profits of

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1961-63

SOURCES: *Public Accounts of Canada* and *Canada Gazette*

Expenditure	1961	1962	1963
	\$	\$	\$
Agriculture ¹.....	264,915,215	288,683,751	234,826,957
Acreage payments to western grain producers.....	40,553,495	40,068,497	139,408
Freight assistance on western feed grains.....	19,178,973	17,513,254	14,462,357
Other ¹	205,202,747	229,102,000	220,225,198
Atomic Energy Control Board.....	38,892,905	34,711,614	63,205,370
Auditor General's Office.....	928,573	1,069,939	1,218,834
Board of Broadcast Governors.....	280,946	311,515	353,913
Canadian Broadcasting Corporation.....	66,766,203	78,160,805	80,799,500
Chief Electoral Officer.....	591,780	365,474	11,815,352
Citizenship and Immigration.....	61,049,383	65,018,446	66,237,581
Civil Service Commission.....	4,220,006	4,738,709	4,792,379
Defence Production.....	20,435,693	23,929,926	28,837,778
Capital assistance to defence industry.....	1,773,972	1,947,143	1,903,978
Other.....	18,661,721	21,982,783	26,933,800
External Affairs.....	103,023,405	95,571,260	85,196,665
Finance.....	1,460,027,110	1,511,953,189	1,355,079,838
Public Debt Charges—			
Interest on public debt.....	756,664,228	802,919,207	881,598,898
Annual amortization of bond discounts and commissions...	38,907,402	33,677,166	32,682,416
Servicing of public debt.....	696,496	789,553	1,583,457
Cost of loan flotation.....	1,334,139	1,600,475	1,922,438
Totals, Public Debt Charges.....	797,602,265	838,986,401	917,787,239

For footnotes, see end of table.

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1961-63—concluded

Expenditure	1961	1962	1963
	\$	\$	\$
Finance—concluded			
Tax-sharing, subsidy and other payments to provinces.....	537,814,873	541,182,624	275,302,387
Government contribution to Civil Service Superannuation Account.....	41,444,858	46,930,411	51,076,449
Other.....	83,165,114	84,853,753	110,913,763
Fisheries.....	19,195,681	23,097,882	23,292,700
Forestry.....	10,060,199	14,737,929	16,174,971
Governor General and Lieutenant-Governors.....	436,926	474,156	467,638
Insurance.....	1,309,674	1,358,022	1,422,120
Justice, including Penitentiaries.....	27,694,612	32,580,184	34,531,655
Labour.....	121,336,329	168,884,756	348,235,508
Unemployment Insurance Act, administration and Government contribution.....	97,240,185 ¹	101,532,690	105,376,974
Other.....	24,096,144 ²	67,352,066	242,858,534
Legislation.....	8,506,699	8,438,007	8,108,063
Mines and Technical Surveys.....	59,120,367	67,599,290	71,130,401
National Defence.....	1,517,530,553	1,626,104,312	1,574,853,661
Mutual Aid to NATO countries.....	50,233,158	54,258,925	..
Other.....	1,467,242,425	1,561,845,387	..
National Film Board.....	4,866,930	5,143,773	5,610,630
National Gallery.....	908,898 ¹	1,053,582	987,271
National Health and Welfare.....	887,146,990	1,040,275,696	1,123,420,683
General health grants to provinces.....	47,993,555	48,999,753	50,295,363
Family allowances.....	506,191,647	580,781,193	531,566,349
Old age assistance, blind persons' and disabled persons' allowances ²	51,205,049	51,374,048	62,695,198
Unemployment assistance.....	51,520,035	92,044,244	96,476,627
Contributions under the Hospital Insurance and Diagnostic Services Act.....	189,368,503	283,883,097	336,672,778
Other.....	40,868,351 ²	43,193,361	45,714,368
National Research Council, including the Medical Research Council.....	34,438,422	38,849,279	40,596,727
National Revenue.....	73,260,720	75,330,063	78,607,667
Northern Affairs and National Resources.....	74,295,902	79,367,605	87,563,579
Post Office.....	178,371,717	185,003,359	189,344,410
Privy Council, including Prime Minister's Office.....	1,850,166	4,479,601	5,016,879
Public Archives and National Library.....	842,304	977,899	1,035,471
Public Printing and Stationery.....	3,495,868 ²	4,010,195	3,977,442
Public Works.....	200,891,585	188,813,326	171,384,711
Trans-Canada Highway.....	57,908,825	41,594,477	53,067,931
Other.....	142,982,760	147,218,849	158,326,780
Royal Canadian Mounted Police.....	56,023,194	60,497,037	65,424,359
Secretary of State.....	4,877,799	4,994,967	4,788,258
Trade and Commerce.....	21,763,612	42,447,107	30,364,666
Transport.....	336,446,853	410,391,113	416,019,472
Veterans Affairs.....	292,297,697	333,222,906	335,602,449
Grand Totals, Expenditure	5,958,100,946	6,520,645,674	6,570,325,358

¹ Includes Board of Grain Commissioners and payments in respect of the Canadian Wheat Board, the Prairie Grain Advance Payments Act and the Prairie Grain Provisional Payments Act, previously included in "Trade and Commerce".

² Pensions under the Old Age Security Act, 1951 (effective January 1952) are paid out of the Old Age Security Fund account and are not recorded under departmental expenditure.

Statements of Assets and Liabilities.—Table 11 shows the statements of assets and liabilities of the Federal Government as they appear in the *Public Accounts of Canada* for the years ended Mar. 31, 1960-62 and the *Canada Gazette* for the year ended Mar. 31, 1963.

11.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1960-63

SOURCES: *Public Accounts of Canada and Canada Gazette*

Item	1960	1961	1962	1963
	\$	\$	\$	\$
Assets				
Current Assets—				
Cash.....	565,436,461	486,759,770	895,321,334	511,347,154
Departmental Working Capital Advances and Revolving Funds.....	196,010,004	171,082,579	223,379,565	243,267,010
Securities held for the securities investment account.....	77,862,926	101,453,744	94,608,163	33,480,163
Other current assets.....	22,837,203	25,051,644	32,707,390	32,176,896
	862,146,594	784,347,737	1,246,016,452	820,271,223
Advances to the Exchange Fund Account.....	1,960,000,000	2,024,000,000	1,793,000,000	2,736,000,000
Sinking fund and other investments held for retirement of unmatured debt.....	85,272,230	17,017,981	19,432,331	22,311,845
Loans to and Investments in Crown Corporations—				
Canadian National Railways.....	1,207,808,404	1,092,589,707	1,165,039,390	1,439,327,659
Central Mortgage and Housing Corporation..	1,318,683,413	1,510,711,116	1,701,028,964	1,802,806,097
National Harbours Board.....	161,397,831	172,769,613	178,743,412	192,579,474
Miscellaneous.....	758,771,898	838,117,202	940,517,693	1,033,406,138
	3,446,661,546	3,614,187,638	3,985,329,459	4,468,119,368
Loans to national governments.....	1,414,527,922	1,378,196,197	1,339,796,827	1,210,776,466
Other Loans and Investments—				
Canada's Subscription to Capital of—				
International Monetary Fund.....	528,728,889	543,696,621	564,660,956	577,250,046
International Bank for Reconstruction and Development.....	70,864,349	73,680,062	73,680,062	80,482,713
Working capital advances to international organizations.....	2,059,265	1,722,095	1,706,951	7,815,457
Provincial governments.....	90,396,788	98,372,577	97,879,073	116,817,625
Soldier Settlement and Veterans' Land Act advances (less reserve for conditional benefits).....	151,626,032	166,092,206	177,355,101	196,018,731
Miscellaneous.....	90,796,089	152,087,804	78,580,945	132,269,807
	934,471,412	1,035,651,365	993,863,088	1,110,654,379
Securities held in trust.....	30,611,723	30,042,201	25,836,647	26,016,102
Deferred Charges—				
Unamortized loan flotation costs.....	150,993,027	130,741,328	121,332,197	131,601,094
Unamortized portion of actuarial deficiencies in the superannuation account of the Canadian forces, public service and Royal Canadian Mounted Police.....	465,300,000	602,961,000	606,494,000	805,043,000
	616,293,027	733,702,328	727,826,197	936,644,094
Suspense accounts.....	33,300	136,101	136,101	136,101
Capital assets.....	1	1	1	1
Inactive loans and investments.....	93,539,317	94,824,381	94,824,381	94,824,381
Totals, Assets.....	9,443,557,072	9,712,105,930	10,226,061,484	11,425,753,960
Less reserve for losses on realization of assets.....	546,384,065	546,384,065	546,384,065	546,384,065
Net Assets.....	8,897,173,007	9,165,721,865	9,679,677,419	10,879,369,895
Net debt.....	12,089,194,003	12,437,115,095	13,228,137,045	13,919,769,972
	20,986,367,010	21,602,836,960	22,907,814,464	24,799,139,867

**11.—Statement of Assets and Liabilities of the Government of Canada, as at
Mar. 31, 1960-63—concluded**

Item	1960	1961	1962	1963
	\$	\$	\$	\$
Liabilities				
Current and Demand Liabilities—				
Outstanding treasury cheques.....	228,768,468	251,740,839	265,658,447	266,408,863
Accounts payable.....	245,099,099	221,396,476	280,711,177	267,364,119
Non-interest-bearing notes payable on demand.....	381,828,500	383,660,444	372,031,620	757,284,519
Matured debt outstanding.....	20,067,997	31,872,131	36,438,562	32,466,821
Interest due and outstanding.....	57,690,734	66,776,824	73,845,656	79,460,893
Interest accrued.....	137,622,473	154,015,640	174,601,049	196,973,991
Other current liabilities.....	27,979,624	38,098,891	30,794,396	31,379,226
Totals, Current and Demand Liabilities.....	1,099,056,895	1,147,561,245	1,234,080,907	1,631,338,432
Deposit and trust accounts.....	242,673,334	239,667,315	266,624,103	225,202,751
Annuity, Insurance and Pension Accounts—				
Government annuities.....	1,156,867,225	1,199,122,929	1,235,305,209	1,264,436,143
Canadian forces superannuation account.....	1,053,010,905	1,155,332,721	1,279,239,154	1,605,796,692
Public service superannuation account.....	1,229,620,322	1,468,848,108	1,586,929,399	1,724,116,105
Miscellaneous.....	125,877,197	132,205,687	144,468,047	152,667,928
Totals, Annuity, Insurance and Pension Accounts.....	3,565,375,649	3,955,509,445	4,245,941,809	4,747,016,868
Undisbursed Balances of Appropriations to Special Accounts—				
Colombo Plan Fund.....	62,965,577	67,533,227	77,625,513	..
Miscellaneous.....	33,654,887	36,959,474	37,509,854	..
Totals, Undisbursed Balances of Appropriations to Special Accounts....	96,619,964	104,492,701	115,135,367	119,951,698
Deferred credits and suspense accounts.....	92,489,365	87,691,340	100,296,144	113,793,787
Unmatured Debt—				
Bonds—				
Payable in Canada.....	13,563,340,350	14,002,750,850	14,930,570,600	15,385,847,250
Payable in London.....	51,811,453	31,989,064	31,990,534	34,584,052
Payable in New York.....	150,000,000	98,175,000	98,175,000	376,405,029
Treasury Bills and Notes—				
Payable in Canada.....	2,125,000,000	1,935,000,000	1,885,000,000	2,165,000,000
Totals, Unmatured Debt.....	15,890,151,803	16,067,914,914	16,945,736,134	17,961,836,331
Totals, Liabilities.....	20,986,367,010	21,602,836,960	22,907,814,464	24,799,139,867

Guaranteed Debt.—In addition to the direct debt already dealt with, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act, the guaranteed bonds and debentures of the Canadian National Railways and the guarantee of deposits maintained by the chartered banks in the Bank of Canada. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board and to farmers and veterans for certain authorized purposes and guarantees under the Export Credits Insurance Act.

12.—Guaranteed Debt of the Government of Canada, as at Mar. 31, 1962

SOURCE: *Public Accounts of Canada*

Item	Amount of Guarantee Authorized	Amount Outstanding in the Hands of the Public as at Mar. 31, 1962 ¹
	\$	\$
Railway Securities Guaranteed as to Principal and Interest—		
Canadian National Ry. Co. 2½ per cent bonds due 1963.....	250,000,000	250,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1964.....	199,862,000	198,862,000
Canadian National Ry. Co. 3 per cent bonds due 1966.....	35,000,000	35,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1967.....	50,000,000	50,000,000
Canadian National Ry. Co. 4½ per cent bonds due 1967.....	75,000,000	72,750,000
Canadian National Ry. Co. 4½ per cent bonds due 1967.....	60,000,000	56,400,000
Canadian National Ry. Co. 5 per cent bonds due 1968.....	70,000,000	70,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1969.....	40,000,000	40,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1971.....	138,000	138,000
Canadian National Ry. Co. 5½ per cent bonds due 1971.....	200,000,000	200,000,000
Canadian National Ry. Co. 3½ per cent bonds due 1974.....	6,000,000	6,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1975.....	90,000,000	85,950,000
Canadian National Ry. Co. 5 per cent bonds due 1977.....	300,000,000	300,000,000
Canadian National Ry. Co. 4 per cent bonds due 1981.....	100,000,000	99,500,000
Canadian National Ry. Co. 5½ per cent bonds due 1985.....	175,000,000	171,500,000
Canadian National Ry. Co. 5 per cent bonds due 1987.....		
	1,651,000,000	1,636,100,000
Railway Securities Guaranteed as to Interest Only—		
Grand Trunk 5 per cent perp. deb. stock £4,270,375/0/0.....	20,782,492	14,790
Other Guarantees—		
Deposits maintained by chartered banks in Bank of Canada.....	Unstated	696,007,777
Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements.....	25,000,000	11,300,000 ²
Insured loans made by approved lenders under the National Housing Act, 1954	6,000,000,000	3,640,000,000 ²
Insurance and guarantees issued or approved under Section 21 and 21A of the Export Credits Insurance Act.....	500,000,000	291,700,000
Loans made by chartered banks under the Farm Improvement Loans Act.....	Indeterminate	43,450,757
Loans made by chartered banks under the Veterans Business and Professional Loans Act.....	Indeterminate	129,045
Loans made by chartered banks under the Prairie Grain Producers' Interim Financing Act, 1956.....	113,632,696	32,789
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act.....	Indeterminate	127,790
Loans made by chartered banks under the Small Business Loans Act.....	30,000,000	2,553,227
Loans made by chartered banks to the Canadian Wheat Board.....	180,000,000	113,555,146
Loans made by chartered banks under the Prairie Grain Advance Payments Act.....	Unstated	8,672,245
Loans made by chartered banks to the Canadian Wheat Board pursuant to the Prairie Grain Provisional Payments Act.....	Unstated	10,572
Loans made by chartered banks under the Prairie Grain Loans Act.....	Indeterminate	3,127
		4,807,547,475

¹ These contingent liabilities are expressed in Canadian dollars; where applicable, stocks and bonds payable solely in sterling or United States dollars are converted on the basis of £1=\$2.80 and \$1 U.S.=\$1 Canadian, respectively. In addition the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1961 amounted to approximately \$15,333,000. Against this amount was a reserve of \$3,726,563.

² As at Dec. 31, 1961.

³ As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders for their respective fiscal years ended between Oct. 31 and Dec. 31, 1961.

A brief commentary dealing with the national debt of the Government of Canada from 1914 to 1953 appears at p. 1091 of the 1954 Year Book. The following table summarizes the debt position during the period 1954-63 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the Federal Government may be found in the *Public Accounts of Canada*. They are summarized by standard classification in DBS publication *Financial Statistics of the Government of Canada* (Catalogue No. 68-211).

13.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1951-63

NOTE.—Statistics for 1867-1913 are given in the 1942 Year Book, p. 775; for 1914-35 in the 1947 edition, p. 972; for 1936-48 in the 1951 edition, p. 1009; and for 1949-53 in the 1959 edition, p. 1063.

Year Ended Mar. 31—	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita ¹	Increase or Decrease of Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita ²
	\$	\$	\$	\$	\$	\$	\$
1954.....	17,923,189,502	6,807,252,438	11,115,937,064	727.15	-45,797,205	476,061,625	32.07
1955.....	17,951,491,464	6,688,411,310	11,263,080,154	717.49	147,143,090	477,914,894	31.26
1956.....	19,124,232,779	7,843,863,815	11,280,368,964	701.47	17,288,810	492,624,067	31.38
1957.....	18,335,797,515	7,328,146,357	11,007,651,158	662.71	-272,717,806	520,189,398	32.35
1958.....	18,418,541,848	7,372,267,958	11,046,273,890	646.74	38,622,732	539,207,260	32.46
1959.....	20,246,773,669	8,568,383,809	11,678,389,860	667.99 ^r	632,115,970	606,615,887	35.52
1960.....	20,986,367,010	8,897,173,007	12,089,194,003	676.51	410,804,143	735,630,175	42.08
1961.....	21,602,836,960	9,165,721,865	12,437,115,095	681.93 ^r	347,921,092	756,664,228	42.34
1962.....	22,907,814,464	9,679,677,419	13,228,137,045	712.34	791,021,950	802,919,207	44.02
1963.....	24,799,139,867	10,879,369,895	13,919,769,972	736.65	691,632,927	881,598,898	47.47

¹ Based on the official estimates of population for June 1 of the year indicated.
estimates of population for June 1 of the year immediately preceding the one indicated.

² Based on the official

Subsection 3.—Revenue from Taxation

The incidence of Federal Government taxation is dealt with in Section 2. This Subsection includes statistical data on revenue received from individual income tax, corporation tax, estate tax, excise duties and excise taxes; customs receipts constitute a single item in the *Public Accounts of Canada* and are not included here.

Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include tax deductions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and, as a single cheque from one employer may frequently cover the tax payments of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 14 pertain to tax collections by the Taxation Division of the Department of National Revenue. The collections are for fiscal years ended Mar. 31.

14.—Taxes Collected by the Taxation Division of the Department of National Revenue, Years Ended Mar. 31, 1951-63

NOTE.—Figures for 1917-34 are given in the 1947 Year Book, pp. 999-1000; for 1935-48 in the 1951 Year Book, p. 994; and for 1949-53 in the 1959 edition, p. 1066.

Year Ended Mar. 31—	Income Tax ¹			Estate Tax	Total Collections
	Individual ²	Corporation	Total		
	\$	\$	\$	\$	\$
1954.....	1,332,116,907	1,246,786,598	2,578,903,505	39,137,594	2,618,041,099
1955.....	1,345,611,443	1,066,585,823	2,412,197,266	44,788,029	2,456,985,295
1956.....	1,354,275,414	1,081,055,818	2,435,331,232	66,607,026	2,501,938,258
1957.....	1,601,897,580	1,335,636,914	2,937,534,494	79,709,197	3,017,243,691
1958.....	1,699,123,470	1,295,470,725	2,994,594,195	71,607,758	3,066,201,953
1959.....	1,561,062,066	1,075,878,164	2,636,940,770	72,535,140	2,709,475,910
1960.....	1,825,517,003	1,234,215,702	3,059,732,765	88,430,702	3,148,193,470
1961.....	2,028,733,394	1,380,128,380	3,408,861,774	84,879,377	3,493,741,146
1962.....	2,200,573,190	1,303,502,634	3,504,075,824	84,579,382	3,588,655,206
1963 ³	2,399,882,273	1,362,655,419	3,762,537,692	87,143,312	3,849,681,004

¹ Includes old age security tax.
income tax collected by the Taxation Division.

² Includes "non-resident" taxes.

³ Includes amounts of provincial

Individual Income Tax Statistics.—Individual income tax statistics are presented in Tables 15 to 17 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes.

15.—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1960 and 1961

City and Province	1960			1961		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000	\$'000	No.	\$'000	\$'000
Brantford, Ont.....	18,242	75,334	7,486	18,572	78,272	7,843
Calgary, Alta.....	83,907	382,384	42,578	87,282	403,548	44,722
Edmonton, Alta.....	97,257	408,702	41,268	107,559	468,110	47,816
Fort William and Port Arthur, Ont.....	32,204	137,363	13,173	31,754	137,916	13,180
Halifax, N.S.....	47,024	189,927	17,776	49,347	206,286	19,737
Hamilton, Ont.....	111,526	502,826	52,201	120,520	559,518	58,352
Hull, Que.....	11,558	44,263	3,375	12,729	50,030	3,723
Kitchener and Waterloo, Ont.....	35,672	150,156	15,437	37,124	156,913	15,804
London, Ont.....	57,477	239,526	24,207	60,708	260,721	28,928
Montreal, Que.....	575,459	2,546,690	240,824	579,939	2,720,868	263,941
New Westminster, B.C.....	18,478	82,055	7,926	19,031	84,404	7,939
Niagara Falls, Ont.....	15,957	68,811	6,266	15,811	70,257	6,420
Oshawa, Ont.....	22,028	101,332	10,823	23,908	110,428	11,974
Ottawa, Ont.....	106,113	479,203	52,275	109,742	518,608	57,468
Quebec, Que.....	65,017	267,248	21,763	70,166	296,786	24,704
Regina, Sask.....	39,043	162,756	16,195	40,048	171,448	17,244
St. Catharines, Ont.....	25,232	113,650	11,238	26,759	122,825	12,444
St. John's, Nfld.....	18,261	75,368	7,697	18,839	79,469	7,900
Saint John, N.B.....	22,694	85,084	7,055	22,785	89,832	7,862
Saskatoon, Sask.....	31,480	127,929	12,147	31,488	131,640	12,789
Sherbrooke, Que.....	15,113	57,292	4,238	17,082	64,608	4,849
Sudbury and Copper Cliff, Ont.....	34,016	159,494	15,453	34,639	165,645	16,443
Sydney and Glace Bay, N.S.....	14,409	59,262	4,790	12,137	49,190	3,830
Toronto, Ont.....	629,736	2,818,961	331,609	667,153	3,099,817	370,032
Vancouver (incl. West Van.), B.C.....	219,225	993,048	108,908	216,669	1,007,549	110,503
Victoria, B.C.....	42,758	185,379	18,153	43,638	191,818	18,804
Windsor, Ont.....	49,345	218,855	20,893	47,307	216,525	20,981
Winnipeg, Man.....	154,212	637,724	64,413	155,243	663,631	67,868
Other localities.....	1,796,423	7,207,596	603,431	1,829,788	7,424,920	628,089
Totals.....	4,389,766	18,578,218	1,783,598	4,507,767	19,601,582	1,910,270

¹ Includes old age security tax.

**16.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class,
1960 and 1961**

Occupational Class	1960			1961		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000	\$'000	No.	\$'000	\$'000
Farmers.....	66,916	275,955	21,814	74,469	324,331	26,963
Fishermen.....	3,200	12,081	948	4,792	20,553	1,796
Professionals—						
Accountants.....	4,119	47,147	9,399	4,471	51,985	10,123
Medical doctors.....	14,013	228,740	52,027	14,588	248,087	56,842
Dentists.....	4,381	53,615	10,429	4,865	60,018	11,599
Lawyers and notaries.....	7,195	105,023	25,185	7,113	111,800	27,196
Engineers and architects.....	2,019	31,639	7,764	2,505	36,804	8,484
Employees.....	3,868,185	15,555,079	1,373,103	3,947,599	16,312,768	1,471,217
Salesmen.....	50,635	281,605	30,390	55,219	320,942	36,617
Business proprietors.....	199,014	1,052,062	119,951	201,605	1,063,988	121,584
Investors.....	112,334	702,655	110,344	123,895	783,044	113,307
Pensioners.....	31,497	98,093	5,548	38,973	125,801	7,640
All others.....	26,258	134,524	16,696	27,673	141,461	16,910
Totals.....	4,359,766	18,578,218	1,783,598	4,507,767	19,601,582	1,910,278

¹ Includes old age security tax.

17.—Individual Income Tax Statistics, by Income Class, 1960 and 1961

Income	Taxpayers		Total Income Assessed		Tax Payable ¹		Average Tax ¹	
	1960	1961	1960	1961	1960	1961	1960	1961
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$	\$
Under \$1,000.....	24,173	23,566	12,471	10,979	1,283	1,780	53	76
\$ 1,000 and under \$ 2,000..	629,747	619,275	979,679	966,594	35,940	34,972	57	56
\$ 2,000 " " \$ 3,000..	876,235	876,115	2,202,591	2,203,013	127,956	127,805	146	146
\$ 3,000 " " \$ 5,000..	1,804,005	1,812,992	7,077,910	7,147,065	488,066	501,788	271	277
\$ 5,000 " " \$10,000..	913,885	1,015,124	5,831,876	6,492,705	583,125	647,617	638	638
\$10,000 " " \$25,000..	124,032	141,363	1,734,483	1,970,635	306,062	341,487	2,468	2,416
\$25,000 " " \$50,000..	14,395	15,766	475,039	520,042	138,387	147,359	9,614	9,347
\$50,000 and over.....	3,294	3,566	264,169	290,549	102,778	107,462	31,202	30,135
Totals.....	4,389,766	4,507,767	18,578,218	19,601,582	1,783,598	1,910,270	406	424

¹ Includes old age security tax.

Corporation Income Tax Statistics.—Corporation statistics presented in Tables 18 and 19 are on a taxation-year basis prior to assessment. The data were extracted and compiled from the returns shortly after they were filed and are as declared by the taxpayer without the scrutiny or revision of the Department of National Revenue. Provincial figures contain an unavoidable bias in favour of Ontario and Quebec because many large corporations operating across Canada file their returns in one or other of these provinces.

18.—Summary Statistics for Corporations Reporting a Profit, Taxation Years 1960 and 1961

Item	1960			1961		
	Corporations Reporting	Current Year Profit	Total Tax Declared ¹	Corporations Reporting	Current Year Profit	Total Tax Declared ¹
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Active taxable corporations—excluding co-operatives and Crown corporations.....	64,100	3,444.4	1,269.7	68,090	3,571.4	1,301.6
Inactive corporations.....	2,594	1.6	0.1	2,341	2.9	0.6
Co-operatives.....	1,878	9.1	2.1	1,852	8.5	2.3
Crown corporations.....	7	37.6	18.3	7	41.1	18.6
Totals, Taxable Corporations...	68,579	3,492.7	1,290.2	72,290	3,623.9	1,323.0
Personal corporations.....	2,380	34.2	—	2,302	33.3	—
Other exempt corporations.....	3,296	31.4	—	3,039	31.0	—
Totals, Taxable and Exempt...	74,255	3,558.3	1,290.2	77,631	3,688.2	1,323.0

¹ Includes old age security tax.

19.—Distribution of Active Taxable Corporations Reporting a Profit, by Industry and Province, Taxation Years 1960 and 1961

Industrial Group and Province	1960			1961		
	Corporations Reporting	Current Year Profit	Total Tax Declared ¹	Corporations Reporting	Current Year Profit	Total Tax Declared ¹
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Industrial Group						
Agriculture, fishing and forestry.....	1,106	14.4	3.9	1,442	19.3	4.2
Mining.....	658	165.3	68.6	600	199.7	83.8
Manufacturing.....	11,772	1,593.4	622.4	12,850	1,598.6	620.6
Construction.....	7,316	139.9	38.7	7,289	143.5	36.2
Transportation, storage and communications.....	2,717	383.6	155.9	3,120	407.6	165.1
Public utilities.....						
Wholesale trade.....	10,219	287.4	92.6	10,342	277.0	86.4
Retail trade.....	10,819	249.8	86.8	11,772	254.4	83.8
Finance.....	12,549	506.1	173.0	13,450	565.1	194.5
Service.....	6,944	104.4	27.9	7,225	106.2	27.1
Totals	64,100	3,444.4	1,269.7	68,090	3,571.4	1,301.6
Province						
Newfoundland.....	610	28.4	11.8	653	30.7	13.0
Prince Edward Island.....	316	6.0	1.8	224	8.3	1.9
Nova Scotia.....	1,519	43.8	16.8	1,780	47.1	17.4
New Brunswick.....	1,242	36.8	14.5	1,347	35.4	13.4
Quebec.....	16,107	1,104.1	394.6	16,952	1,134.8	403.3
Ontario.....	23,648	1,629.9	598.6	25,310	1,684.2	607.0
Manitoba.....	3,180	117.5	46.4	3,475	120.0	45.9
Saskatchewan.....	1,875	35.4	12.1	1,962	32.4	11.2
Alberta.....	6,039	168.6	62.5	6,598	189.3	70.9
British Columbia.....	9,564	273.9	110.5	9,789	289.4	117.6

¹ Includes old age security tax.

20.—Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1960 and 1961

NOTE.—Figures are for corporations described as "fully tabulated", which means corporations for which sufficient information has been received for complete analyses.

Income Class and Size of Assets	1960		1961	
	Corporations Reporting	Current Year Profit	Corporations Reporting	Current Year Profit
Income Class	No.	\$'000,000	No.	\$'000,000
Under \$5,000.....				
\$5,000 under \$10,000.....	26,012	44.2	27,783	47.3
\$10,000 under \$25,000.....	10,716	71.7	12,103	81.7
\$25,000 under \$50,000.....	15,918	257.7	15,174	240.6
\$50,000 under \$100,000.....	5,764	180.5	7,305	238.4
\$100,000 under \$250,000.....	1,980	136.1	1,966	136.5
\$250,000 under \$500,000.....	1,517	236.1	1,511	238.2
\$500,000 under \$1,000,000.....	620	218.7	627	219.6
\$1,000,000 under \$5,000,000.....	400	278.3	363	249.5
\$5,000,000 or over.....	328	678.9	321	665.8
	77	1,101.0	85	1,191.0
Totals.....	63,312	3,203.1	67,238	3,308.6
Total Assets				
Under \$100,000.....	28,822	151.0	29,980	156.8
\$100,000 under \$250,000.....	16,818	193.7	18,221	214.8
\$250,000 under \$500,000.....	8,150	168.2	9,025	180.5
\$500,000 under \$1,000,000.....	4,621	176.2	4,878	178.2
\$1,000,000 under \$5,000,000.....	3,673	483.2	3,804	457.7
\$5,000,000 under \$10,000,000.....	544	221.7	604	229.7
\$10,000,000 under \$25,000,000.....	358	313.4	376	296.2
\$25,000,000 under \$100,000,000.....	239	587.6	262	574.5
\$100,000,000 or over.....	87	908.0	88	1,020.2

Succession Duties and Estate Taxes

A history of succession duties is given in the 1956 Year Book, pp. 1064-1068. From Jan. 1, 1947 to Mar. 31, 1963, only Ontario and Quebec among the provinces levied succession duties, the other provinces having leased this field to the Federal Government under the terms of the 1947, 1952 and 1957 tax rental agreements (see p. 964). However, British Columbia re-entered the field effective for all deaths occurring on or after Apr. 1, 1963. The incidence of the estate tax is discussed at p. 971.

Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1962 amounted to \$84,579,000. In the same year, Quebec's revenue from succession duties amounted to \$25,469,000 and Ontario's revenue from succession duties to \$40,397,000.

Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1958-62 in Table 21.

21.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1958-62

Commodity	1958	1959	1960	1961	1962
	\$	\$	\$	\$	\$
Domestic—					
Automobiles, tires and tubes.....	62,108,080	47,303,897	47,266,990	44,854,366	21,798,810
Beverages.....	608,851	...	...	...	...
Candy and chewing gum.....	712,700	...	...	...	...
Carbonic acid gas.....	6,463	...	...	...	...
Cigars, cigarettes and tobacco.....	140,682,617	146,509,545	183,868,989	191,918,772	205,752,998
Licences.....	81,984	19,324	518	...	...

21.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1958-62—concluded

Commodity	1958	1959	1960	1961	1962
	\$	\$	\$	\$	\$
Domestic—concluded					
Lighters.....	60,329	62,833	64,393	83,290	88,792
Matches.....	632,146	628,914	610,733	509,603	550,522
Other taxes on manufactures.....	4,668,672	4,526,775	4,869,629	5,956,062	5,345,222
Phonographs, radios and tubes.....	5,581,524	5,495,501	5,556,782	4,656,242	5,116,086
Playing cards.....	701,555	783,670	786,055	704,800	567,269
Sales, domestic.....	764,789,901	753,175,577	863,255,893	856,258,282	912,351,027
Television sets and tubes.....	9,927,745	10,033,057	9,139,633	8,140,295	9,038,063
Toilet preparations.....	6,032,146	6,576,040	7,408,815	8,145,786	9,123,032
Wines.....	2,744,237	3,140,180	3,026,623	3,223,761	3,350,026
Penalties and interest.....	476,786	427,332	571,638	730,477	615,683
Totals, Domestic.....	999,815,736	978,682,645	1,126,426,690	1,125,181,736	1,173,997,534
Imported.....	159,173,870	162,110,151	198,111,452	190,271,710	179,250,404
Grand Totals.....	1,158,989,606	1,140,792,796	1,324,538,142	1,315,453,446	1,353,247,938

Excise Duties

Gross excise duties collected during the years ended Mar. 31, 1958-62 are given in Table 22 and other data of interest arising as a by-product of administration, such as the quantities of grain and other products used in distillation and the quantities of goods taken out of bond and subject to excise duty, are given in Table 23. The totals given in Table 22 do not agree with net excise duties as shown in Table 9 because refunds and drawbacks are included. A drawback of 99 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

22.—Gross Excise Duties Collected, Years Ended Mar. 31, 1958-62

Item	1958	1959	1960	1961	1962
	\$	\$	\$	\$	\$
Spirits.....	89,928,576	96,550,734	102,353,962	108,502,109	113,689,182
Beer or malt liquor.....	88,225,546	83,058,147	90,704,392	90,970,563	93,051,457
Tobacco and cigarettes.....	131,378,168	140,881,924	145,503,942	148,964,858	159,883,233
Cigars.....	305,894	319,369	672,030	693,646	699,421
Licences.....	34,069	34,471	34,547	34,226	35,993
Totals.....	309,872,253	320,844,645	339,268,873	349,165,402	367,359,286

23.—Statistics of Licences and Distillation, Years Ended Mar. 31, 1958-62

Item	1958	1959	1960	1961	1962
Licences issued.....No.	28	27	28	29	30
Licence fees.....\$	7,250	7,000	7,250	7,500	7,750
Grain, etc., Used for Distillation—					
Malt.....lb.	39,096,917	38,307,971	44,931,157	44,735,863	47,653,183
Indian corn....."	247,011,281	240,221,429	280,449,929	294,767,657	328,255,685
Rye....."	61,228,045	61,923,728	75,823,828	67,931,857	77,422,706
Wheat and other grain....."	770,540	4,105,310	1,619,782	362,468	2,813,353
Totals, Grain Used.....lb.	348,106,783	344,558,438	402,824,696	407,797,845	456,144,910
Molasses used.....lb.	33,352,564	69,272,572	47,990,689	67,372,931	53,248,173
Wine and other materials....."	4,875,894	8,485,879	7,949,327	12,311,263	10,452,687
Sulphide liquor.....gal.	374,711,047	339,002,204	341,939,637	347,032,242	372,834,233
Proof spirits manufactured...proof gal.	28,135,387	29,763,383	32,188,806	33,650,346	36,420,765

The quantity of spirits manufactured has fluctuated greatly since 1920, varying from a low of 2,356,329 proof gal. in that year to a high of 35,555,059 proof gal. recorded in 1945. The total for 1962 was 36,420,769 proof gal.

The amounts of beverage spirits, malt, cigars, cigarettes and other tobacco taken out of bond for consumption are given in the Domestic Trade Chapter, Table 36, p. 872.

Subsection 4.—Statistics of Federal Government Enterprises

As stated on p. 960, a report on the financial statistics of Federal Government business enterprises was issued for the first time in 1962. For the purposes of this study, a government enterprise is defined as an instrument of a political, decision-making body to produce goods and services for sale on the open market at a price designed to cover cost. The essential feature of an enterprise as distinguished from a general government operation is that it charges a price for its services according to use. In motivation and behaviour, government enterprises are more similar to private business corporations than to general government operations. One obvious criterion in identifying an enterprise is the maintenance of accounting records which permit the allocation of specific elements of costs against revenue.

Tables 24 and 25 show details of assets, liabilities, current revenues and expenditures of Federal Government enterprises for the fiscal years ended nearest to Dec. 31. The data were obtained mainly from the annual reports of pertinent Crown corporations.

24.—Assets, Liabilities and Net Worth of Federal Government Enterprises as at Fiscal Year Ends Nearest Dec. 31, 1958-61

NOTE.—Excludes Bank of Canada.

Item	1958	1959	1960	1961
Assets	\$'000	\$'000	\$'000	\$'000
Cash.....	76,975	74,388	83,726	79,016
Accounts receivable.....	130,707	139,334	134,236	162,367
Inventories.....	796,103	836,360	884,593	861,189
Interest, dividends and rents receivable.....	6,552	7,987	10,635	12,083
Accrued revenue (interest owing from federal and municipal governments, etc.).....	4,261	4,812	6,062	7,665
Prepaid expenses.....	8,924	3,916	4,230	3,833
Fixed assets.....	3,977,958 ¹	4,381,034 ¹	4,536,481 ¹	4,628,468 ¹
Loans and advances receivable from governments, etc.....	1,071,289	1,396,428	1,717,769	1,924,923
Securities held as investments.....	79,232	85,276	91,856	85,992
Mortgages receivable and agreements of sale.....	200,820	229,783	267,883	321,311
Depreciation funds, trust and deposit accounts and other restricted funds.....	129,050	147,691	162,256	221,938
Deferred charges.....	45,357	60,191	86,674	82,789
Other assets.....	18,442	26,918	23,767	38,158
Totals, Assets.....	6,540,670	7,394,118	7,990,168	8,429,732
Liabilities and Net Worth				
Accounts payable.....	546,486	598,130	557,565	540,926
Temporary loans, advances and notes payable.....	235,501	241,138	276,609	271,241
Interest payable.....	20,585	34,143	42,597	12,881
Accrued expenditure (interest owing, provision for income tax and other).....	54,867	53,696	66,051	105,751
Long-term loans and advances owing.....	2,277,151	2,557,575	2,776,479	3,095,455
Long-term debt (bonds, debentures, mortgages and agreements of sale).....	1,033,809 ²	1,341,059 ²	1,680,308 ²	1,673,703 ²
Deferred credits.....	81,169	77,138	74,491	74,005
Trust and deposit accounts.....	7,142	5,031	4,446	4,680
Liability reserves.....	79,036	96,118	109,266	169,657
Other liabilities.....	36,471	26,469	24,583	18,218
Proprietary equity (net worth).....	2,168,453	2,363,621	2,377,773	2,463,215
Totals, Liabilities and Net Worth.....	6,540,670	7,394,118	7,990,168	8,429,732

¹ Does not include government-owned plants but does include physical property held for sale.
² Of these amounts, \$1,024,710,000, \$1,335,510,000, \$1,677,209,000 and \$1,670,653,000, respectively, are guaranteed by the Federal Government.

25.—Current Revenue and Expenditure of Federal Government Enterprises, Fiscal Years Ended Nearest Dec. 31, 1958-61

NOTE.—Excludes the Bank of Canada; includes current operations of the Northern Ontario Pipe Line Crown Corporation from October 1958 and of the St. Lawrence Seaway Authority from April 1959.

Item	1958	1959	1960	1961
	\$'000	\$'000	\$'000	\$'000
Current Revenue				
Revenue from sales and services on current operations.....	2,032,906	2,082,196	1,980,442	2,086,806
Financial income.....	55,580	78,531	108,303	123,787
Interest.....	51,325	74,111	104,906	122,675
Other.....	4,255	4,420	3,397	1,112
Rental income.....	11,254	14,931	17,286	20,601
Contributions from Federal Government.....	52,056	52,300	59,288	70,252
Other current income.....	39,093	43,496	47,494	54,079
Totals, Current Revenue.....	2,190,889	2,271,454	2,212,813	2,355,525
Current Expenditure				
Cost of goods and services sold from current operations.....	1,956,894	1,967,948	1,875,556	1,929,207
Wages and salaries.....	563,174	586,317	578,441	602,057
Net drawings on (+) or net additions to (−) inventories.....	35,656	−40,324	−28,236	3,404
Other purchases of goods and services.....	1,558,064	1,481,955	1,525,351	1,523,746
Provision for depreciation.....	105,201	125,121	124,742	138,433
Interest on debt.....	94,292	127,545	174,177	198,159
Other current expenditure.....	8,073	7,114	6,395	5,339
Totals, Current Expenditure.....	2,164,460	2,227,728	2,180,870	2,271,138
Net profit before provision for income tax ¹	26,429	43,726	31,943	84,387
Estimated income tax.....	13,963	12,448	19,205	20,409
Net profit after provision for income tax.....	12,466	31,278	12,738	63,978
Totals, Current Expenditure plus Net Profit..	2,190,889	2,271,454	2,212,813	2,355,525

¹ Includes profits of the Canadian Wheat Board which are distributed to grain producers.

Section 4.—Provincial Public Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the *Public Accounts* figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section.

As of 1952, the fiscal years of all provinces end on Mar. 31. Figures for the Northwest Territories are included from 1955.

Subsection 1.—Revenue and Expenditure of Provincial Governments

Table 26 shows net revenue and expenditure of provincial governments for the years ended Mar. 31, 1957-61, and Tables 27 and 28 give details of such revenue and expenditure for the fiscal year ended Mar. 31, 1961. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from

revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; grants-in-aid and shared-cost contributions from other governments; and capital revenue. Table 29 gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

26.—Net Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1957-61

Province or Territory	1957	1958	1959	1960	1961
NET GENERAL REVENUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	36,870	39,479	62,381	60,266	64,461
Prince Edward Island.....	7,570	9,441	12,568	13,819	16,093
Nova Scotia.....	57,881	64,480	75,752	90,532	92,225
New Brunswick.....	57,335	61,616	71,007	77,343	86,628
Quebec.....	445,930	515,384	556,723	605,035	640,711
Ontario.....	481,775	594,480	647,067	778,450	833,128
Manitoba.....	66,120	73,594	76,573	99,814	104,145
Saskatchewan.....	121,872	135,965	141,409	145,658	148,920
Alberta.....	241,317	246,013	236,370	278,882	245,483
British Columbia.....	273,059	281,796	295,722	313,758	320,288
Yukon Territory.....	1,703	2,056	1,885	2,082	2,308
Northwest Territories.....	1,125	1,269	1,412	1,597	1,744
Totals.....	1,792,557	2,025,573	2,178,869	2,467,236	2,556,134
NET GENERAL EXPENDITURE ¹					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	44,346	47,878	61,530	64,863	74,713
Prince Edward Island.....	10,094	10,766	14,388	20,049	15,386
Nova Scotia.....	70,756	74,474	86,336	91,804	111,689
New Brunswick.....	59,339	63,486	70,928	79,630	94,868
Quebec.....	433,459	493,374	533,026	600,942	749,296
Ontario.....	552,155	656,481	741,936	898,230	937,308
Manitoba.....	62,887	75,615	97,821	127,695	137,055
Saskatchewan.....	110,132	124,353	137,513	142,248	150,027
Alberta.....	170,000	199,420	215,030	234,657	266,314
British Columbia.....	257,641	287,465	266,584	283,163	331,476
Yukon Territory.....	2,143	2,070	2,148	2,297	2,610
Northwest Territories.....	886	1,605	1,934	1,354	2,033
Totals.....	1,773,818	2,036,987	2,229,174	2,546,932	2,872,775

¹Excludes debt retirement.

27.—Net General Revenue of Provincial Governments, Year Ended Mar. 31, 1961

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—													
Corporations.....	292	86	891	670	27,769	15,063	1,267	724	2,117	2,867	—	—	51,776
Income—													
Corporations.....	—	—	—	—	98,488	170,584	—	—	—	—	—	—	269,072
Individuals.....	—	—	—	—	60,678	—	—	—	—	—	—	—	60,678
Property.....	—	—	93	234	—	2,197	—	14	—	5,646	199	3	8,386
Sales—													
Alcoholic beverages.....	1	392	1	1	2,010	—	702	1	—	1	79	—	2,481
Amusements and admissions.....	83	64	386	286	7,376	10,270	—	95	777	2,919	15	—	22,973
Motor fuel and fuel oil.....	5,856	2,442	16,078	12,869	101,129	165,969	16,581	22,029	27,073	32,379	284	220	402,909
Tobacco.....	1	310	1,809	1,809	22,172	—	—	1	—	—	291	—	24,291
General.....	10,984	1,194	10,406	9,058	69,440	—	—	23,142	87,606	—	—	—	211,830
Other commodities and services.....	—	—	317	—	6,860	37,603	—	—	3	—	—	—	7,177
Succession duties.....	—	—	1	—	22,846	86,729	13,083	8,822	—	—	—	—	60,456
Hospital Insurance Premiums.....	—	814	—	6,662	—	6,483	292	128	—	287	—	—	116,110
Other.....	288	—	97	93	1,423	—	—	—	53	—	4	—	9,118
Totals, Taxes.....	17,503	5,302	28,269	31,681	420,191	494,928	31,925	54,957	30,023	131,674	581	223	1,247,257
Federal/Provincial Tax-Sharing Arrangements.....	20,460	4,802	32,243	26,749	70,365	113,792	40,078	40,578	57,146	73,686	435	541	480,875
Privileges, Licences and Permits—													
Alcohol.....	2,000	33	286	16	14,145	26,373	2,752	19	934	514	10	57	47,149
Liquor control and regulation.....	1,961	787	5,823	4,737	40,499	70,193	7,571	7,584	12,923	19,749	149	37	172,013
Motor vehicles.....	1,590	17	1,413	3,760	35,457	43,995	4,149	20,229	111,820	54,341	26	72	276,889
Natural resources.....	520	121	601	501	8,799	9,863	1,337	1,634	1,869	2,580	78	31	27,884
Other.....	6,071	958	8,133	9,014	98,900	150,424	15,809	29,466	127,546	77,184	263	197	523,915
Totals, Privileges, Licences and Permits.....	373	339	1,605	1,333	7,389	11,027	1,793	3,426	4,831	6,041	91	38	38,286
Sales and services.....	316	59	338	227	1,130	2,371	404	716	1,536	692	12	16	7,817
Fines and penalties.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Government of Canada.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Share of income tax on power utilities.....	130	42	346	115	1,221	578	27	58	1,449	260	—	—	4,226
Subsidies.....	17,069	3,157	9,557	9,179	3,241	3,641	2,054	2,092	2,358	1,281	40	45	53,714
Liquor profits.....	2,377	1,305	11,710	8,220	32,683	55,263	11,657	13,673	19,940	27,898	861	670	186,187
Other revenue.....	53	108	6	72	5,400	662	23	3,646	283	205	8	1	10,467
Totals, excluding Non-revenue and Surplus Receipts.....	64,352	16,072	92,207	86,590	640,420	832,686	103,770	148,612	245,112	318,871	2,291	1,731	2,552,714
Non-revenue and surplus receipts.....	109	21	18	38	291	442	375	308	371	1,417	17	13	3,420
Totals, Net General Revenue.....	64,461	16,093	92,225	86,628	640,711	833,128	104,145	148,920	245,483	320,288	2,308	1,744	2,556,134

¹ Taxed under the general sales tax.

28.—Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1961

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General Government.....	5,729	776	4,746	3,772	36,430	32,049	6,995	7,182	10,217	16,867	293	94	125,150
Protection of Persons and Property.....	3,522	413	3,087	2,265	35,119	46,912	5,842	7,910	15,852	15,359	3	20	136,264
Transportation and Communications—													
Highways, roads and bridges.....	15,535	4,360	30,214	31,431	175,455	240,732	36,669	30,835	68,513	73,702	521	60	708,057
Waterways.....	98	66	827	518	511	5	39	327	379	1,536	—	—	4,336
Other.....	—	5	58	—	497	—	—	—	—	—	—	—	887
Totals, Transportation and Communications.....	15,633	4,431	31,099	31,949	176,483	240,737	36,708	31,463	68,892	75,238	577	60	713,280
Health and Social Welfare—													
Health—													
General health.....	261	70	128	329	2,415	2,911	572	486	295	1,107	41	1	8,616
Public health.....	701	196	1,844	1,188	9,717	6,054	1,576	3,604	2,357	3,995	93	195	31,520
Medical, dental and allied services.....	1,573	137	210	74	1,159	2,575	2,269	2,053	2,073	4,431	—	10	14,534
Hospital care.....	8,009	1,949	16,888	17,962	82,617	187,743	25,352	30,850	35,840	45,986	309	457	453,942
Social Welfare—													
Aid to aged persons.....	1,809	521	1,790	1,953	14,249	14,295	2,041	3,553	9,130	13,577	17	45	63,010
Aid to blind persons.....	90	—38	143	125	531	426	110	121	165	365	2	6	2,045
Aid to unemployed employables and unemployables.....	6,696	249	2,964	499	8,135	12,789	4,383	3,765	3,768	11,623	28	39	54,976
Mothers' allowances.....	—	125	1,399	1,399	19,314	12,878	1,957	1,957	2,271	—	—	—	37,944
Child welfare.....	509	111	759	299	35,646	5,345	1,647	1,024	2,506	2,835	38	52	50,801
Labour.....	68	5	233	331	4,102	1,716	304	271	543	457	—	—	8,030
Other social welfare.....	1,009	39	71	97	30,079	2,725	1,117	2,254	1,857	1,794	—	23	40,796
Totals, Health and Social Welfare.....	20,725	3,364	25,050	24,316	207,934	249,458	37,371	49,918	60,555	86,170	526	828	766,215
Recreational and Cultural Services.....	349	104	699	360	3,260	9,859	851	1,100	3,052	2,764	35	22	22,455
Education—													
Schools operated by local authorities.....	16,545	2,503	17,960	9,989	104,094	164,433	23,813	29,548	55,249	57,917	926	843	486,800
Universities, colleges and other schools.....	1,182	540	3,795	2,564	69,331	46,239	5,614	6,459	20,397	10,704	—	—	166,765
Education of the handicapped.....	1,180	42	1,415	651	310	3,352	112	255	673	479	—	—	7,469
Superannuation and pensions.....	—57	3	1,940	17	1,671	15,586	496	900	2	3,729	—	—	24,087
Other.....	649	71	814	274	6,918	2,384	828	1,119	664	1,269	4	8	15,002
Totals, Education.....	18,499	3,159	25,564	13,575	182,324	231,994	30,863	38,281	79,985	74,098	930	851	700,123

28.—Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1961—concluded

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Natural Resources and Primary Industries—													
Fish and game.....	1,997	72	264	364	8,691	2,892	845	438	836	1,190	16	40	17,645
Forests.....	746	88	5,277	2,393	11,500	17,425	1,694	1,032	6,274	18,639	—	—	67,068
Lands: settlement and agriculture.....	685	530	1,558	1,721	40,047	9,228	6,397	5,955	6,962	2,223	—	—	77,986
Minerals and mines.....	142	1	1,313	1,165	4,448	1,223	353	1,412	4,404	2,398	—	—	15,869
Water resources.....	—	—	8	32	5,784	1,587	984	1,732	6,991	965	—	—	16,683
Other.....	153	33	142	241	—	3,825	1,084	2,044	462	428	—	—	5,432
Totals, Natural Resources and Primary Industries.....	3,723	724	8,562	4,916	70,470	36,180	11,367	11,593	25,949	27,443	16	40	200,983
Trade and industrial development.....	430	125	919	827	4,796	3,938	1,022	1,443	670	1,015	15	—	15,200
Local government planning and development.....	264	7	160	191	777	2,097	302	1,408	1,621	1,351	49	14	7,241
Debt charges excluding debt retirement.....	3,410	1,326	9,777	6,822	14,415	45,985	1,220	—1,316	—16,825	2,030	34	—	66,578
Unconditional grants to local governments.....	1,190	355	1,084	5,528	250	32,488	2,722	16	15,182	11,137	125	79	70,156
Contributions to government enterprises.....	1,138	—	337	25	625	511	275	—	2,561	2,561	—	—	3,472
Other expenditure.....	101	586	187	111	12,370	1,680	1,341	645	868	15,698	—	25	33,612
Totals, excluding Non-expense and Surplus Payments.....	74,713	15,370	111,271	94,657	745,263	933,888	136,879	149,643	265,998	330,711	2,603	2,633	2,863,029
Non-expense and surplus payments.....	—	16	418	211	4,033	3,420	176	384	318	765	7	—	9,746
Totals, Net General Expenditure (excluding debt retirement).....	74,713	15,386	111,689	94,868	749,296	937,308	137,055	150,027	266,314	331,476	2,610	2,633	2,872,775

29.—Specified Amounts Paid to Other Governments by Provincial Governments, Year Ended Mar. 31, 1961

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Paid to Local Governments—													
Shared-revenue contributions ¹	—	—	10	—	—	1,106	—	—	182	—	—	—	1,298
Subsidies.....	1,183	354	1,074	5,527	250	30,150	2,506	—	15,000	11,137	125	79	67,385
Grants in lieu of local taxes on provincial government property ²	7	1	—	—	—	1,232	216	8	—	—	—	—	1,464
Other.....	—	—	—	1	—	—	—	8	—	—	—	—	9
Grants-in-Aid and Shared-Cost Contributions—													
Corrections.....	—	—	—	25	—	232	—	—	—	—	—	—	257
Police protection.....	—	—	—	—	—	264	—	—	—	—	—	—	264
Fire protection.....	—	2	—	—	1,850	169	—	—	—	—	—	—	2,021
Other protection.....	—	—	10	—	—	—	—	—	—	—	—	—	—
Highways, roads and bridges.....	194	21	187	189	15,113	70,299	4,609	6,614	7,288	642	48	11	89
Public health.....	29	661	—	—	3,677	2,671	76	188	1,245	323	—	—	105,215
Medical, dental and allied services.....	—	—	—	—	—	36	77	56	—	—	—	—	8,870
Hospital care ³	—	—	—	650	—	—	4	6	—	—	—	—	169
Aid to aged persons (homes).....	—	—	—	—	—	7,898	—	—	—	—	—	—	666
Aid to unemployed employables and unemployables.....	—	—	1,222	1,365	—	18,498	1,352	5,099	2,478	13	—	—	7,911
Child welfare.....	—	—	—	199	—	3,761	45	—	15,721	—	—	55	45,750
Other health and social welfare.....	—	—	—	—	—	—	27	—	—	—	—	—	4,005
Parks, beaches and other recreational areas.....	—	—	—	—	—	190	—	—	—	—	—	3	—
Other recreational and cultural services.....	—	—	—	—	—	325	—	4	1,020	—	—	—	1,345
Schools operated by local authorities ⁴	5	2,346	16,425	9,360	98,355 ⁵	161,773	24,049	28,793	56,322	56,491	7	195 ⁶	539
Lands—													
Settlement and agriculture.....	—	—	—	—	232	749	477	119	315	—	—	—	1,892
Other.....	—	—	—	—	161	69	—	334	—	2	—	—	566
Local government planning and development.....	—	—	—	85	—	—	—	393	—	—	—	—	488
Civil defence.....	—	—	78	65	—	729	—	—	134	425	—	—	1,431
Housing.....	—	—	—	—	200	776	—	—	—	—	—	—	976
Winter works projects.....	39	—	51	—	6,686	3,220	—	1,184	2,150	2,415	—	—	15,745
Other payments.....	—	—	—	—	68	59	315	—	—	—	—	—	442
Totals, Paid to Local Governments.....	1,452	2,724	19,718	17,476	126,666	304,712	33,753	42,896	86,134	87,469	173	343	723,126
Paid to Government of Canada—													
Grants-in-aid and shared-cost contributions.....	—	—	800 ⁷	—	—	—	—	—	—	—	—	—	800
Police services—RCMP.....	683	124	668	541	—	—	872	1,101	1,560	1,927	—	—	7,476
Totals, Paid to All Governments.....	2,135	2,848	21,186	18,017	126,666	304,712	34,625	43,997	87,694	89,096	173	343	731,402

1 N.S.—Crown land leases; Ont.—share of liquor licences; Alta.—share of liquor fines.
 2 Excludes amounts paid directly to municipal hospital boards.
 3 Excludes amounts paid directly to provincial government enterprises.
 4 Includes grants paid directly to teachers in P.E.I., N.B. and Que.
 5 Excludes \$2,875,000 expenditures by the province to meet debt charges of various school corporations.
 6 Excludes \$2,875,000 expenditures by the province to meet debt charges of various school corporations.
 7 Local schools are operated by the territorial government and by religious denominations.
 8 Local schools are operated by the Federal Government, religious denominations and school districts; amount shown was paid to school districts.
 9 Movements of coal.

Subsection 2.—Debt of Provincial Governments

Table 30 shows total bonded debt, by province, as at Mar. 31, 1960-62. Table 31 shows that the majority of bond issues are payable in Canada. Table 32 provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1962.

30.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1960-62

Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue	Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue
	\$'000	p.c.	yrs.		\$'000	p.c.	yrs.
Newfoundland—				Ontario—concluded			
1960.....	60,500	4.58	18.8	1961.....	1,691,531 ¹	4.02	18.7
1961.....	76,500	4.86	18.8	1962.....	1,820,378	4.14	18.3
1962.....	86,500	4.97	19.5	Manitoba—			
Prince Edward Island—				1960.....	253,672	3.57	14.5
1960.....	27,196	4.18	15.1	1961.....	298,892	3.94	15.4
1961.....	28,480	4.33	14.7	1962.....	305,302	4.18	15.7
1962.....	29,960	4.59	14.5	Saskatchewan—			
Nova Scotia—				1960.....	364,081	4.28	18.7
1960.....	270,739	3.58	16.3	1961.....	449,127	4.40	18.2
1961.....	295,860	3.72	16.4	1962.....	487,734	4.51	18.3
1962.....	330,870	4.06	17.5	Alberta—			
New Brunswick—				1960.....	18,889	2.80	16.4
1960.....	248,451	3.93	17.9	1961.....	16,164	2.78	17.0
1961.....	244,881	4.01	18.1	1962.....	14,528	2.80	17.6
1962.....	250,138	4.15	18.4	British Columbia—			
Quebec—				1960.....	80,094	3.39	23.6
1960.....	447,153	3.48	17.6	1961.....	75,806	3.42	24.0
1961.....	532,153	3.88	18.1	1962.....	74,916	3.41	24.1
1962.....	635,975	4.27	18.4	Totals—			
Ontario—				1960.....	3,414,109	3.87	18.3
1960.....	1,643,334 ¹	3.98	19.2	1961.....	3,709,394	4.02	18.1
				1962.....	4,036,301	4.21	17.9

¹ Excludes bonds assumed by the province.

31.—Gross Bonded Debt¹ (exclusive of Treasury Bills) of Provincial Governments, by Place of Payment, as at Mar. 31, 1960-62

Payable in—	1960	1961	1962
	\$'000	\$'000	\$'000
Canada.....	2,384,101	2,711,043	3,060,981
Britain.....	2,312	2,312	2,312
Britain and Canada.....	2,974	2,974	2,974
United States.....	828,661	839,024	836,959
United States and Canada.....	97,207	84,487	67,710
Britain, United States and Canada.....	98,854	60,451	56,262
Switzerland.....	—	9,103	9,103
Totals.....	3,414,109	3,709,394	4,036,301

¹ Excludes bonds assumed by the provinces.

32.—Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1962

Direct and Indirect Debt	Nfld.		P.E.I.		N.S.		N.B.		Que.		Ont.		Man.		Sask.		Alta.		B.C.		Yukon		N.W.T.		Total	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt—																										
Funded Debt—																										
Bonded debt.....	86,500	29,960	330,870	250,138	635,975	1,820,378	305,302	487,734	14,523 ¹	74,916	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,036,301
Less sinking funds.....	14,222	4,925	65,147	67,544	139,409	177,186	45,772	37,308	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	646,429
Net bonded debt.....	72,278	25,035	265,723	182,594	496,566	1,643,192	259,530	450,426	14,523	74,916	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,389,872
Net treasury bills (term of 2 or more years).....	—	—	—	19,474	—	—	26,270	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74,930
Net Funded Debt.....	72,278	25,035	265,723	202,068	496,566	1,643,192	285,800	452,023	14,523	74,916	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,464,802
Short-term treasury bills (term of less than 2 years).....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Temporary loans and overdrafts.....	3,835	—	590	8,567	19,500	—	40,562	8,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	68,062
Trust funds, savings and other deposits.....	—	3,489	621	1,115	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20,103
Accounts and other payables.....	6,556	—	14,883	17,230	105,183	140,808	8,040	10	20	10,272	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	164,912
Accrued interest and other accrued expenditure.....	—	408	3,444	6,030	6,922	40,423	16,013	6,118	130	22,950	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	267,493
Totals, Direct Debt (less Sinking Funds).....	82,669	34,392	285,261	233,019	628,657²	1,901,898	352,794	468,961	36,376	34,711³	2,876	1,277	2,876	1,277	4,064,891											
Indirect Debt—																										
Guaranteed bonds or debentures.....	17,220	2,870	3,721 ⁴	51,709	902,891	1,582,123	175,392	12,788	236,778	1,273,873	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,259,455
Less sinking funds.....	—	—	601	222	32,285	23,782	4,244	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	114,159
Net guaranteed bonds or debentures.....	17,220	2,870	3,120	51,577	869,606	1,558,341	171,148	12,788	232,516	1,273,873	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4,145,296
Guaranteed bank loans.....	8,981	4,017 ⁵	2,019	5,272	1,750	4,538	555	6,135	1,238	1,311	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35,816
Municipal Improvement Assistance Act loans.....	—	1	214	94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,466
Other guarantees.....	—	—	—	—	—	—	22,800	2,450	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	139,368
Totals, Indirect Debt (less Sinking Funds).....	26,201	6,888	5,353	56,943	872,141	1,560,879	194,503⁶	21,479	235,881⁷	1,341,678	—	—	—	—	4,321,946											
Totals, Direct and Indirect Debt (less Sinking Funds).....	108,870	41,280	290,614	291,962	1,500,798	3,462,777	547,297	490,440	272,257	1,376,389	2,876	1,277	2,876	1,277	8,386,837											
Direct debt (less sinking funds) per capita.....	176	324	382	387	117	300	377	504	27	21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	219
Indirect debt (less sinking funds) per capita.....	56	65	7	94	163	246	208	23	172	809	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	233

¹ Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation \$20,000,000 and by the Ontario Municipal Improvement Corporation \$40,300,000, constructed by the province's share, at Mar. 31, 1962 amounting to \$39,552,000, of the debt relating to the cost of the Metropolitan Boulevard constructed by the Montreal Metropolitan Corporation and the City of Montreal. ² Excludes net liability of the province to the Province of Ontario Savings Office \$75,984,000 at Mar. 31, 1962. ³ Excludes debt of toll road authority. ⁴ Excludes bonds of the Halifax-Dartmouth Bridge Commission, \$6,561,000. ⁵ Information re amount actually outstanding not available; this figure is amount authorized. ⁶ In addition, the province has guaranteed the interest on school district debentures having a par value of \$5,630,000 and on sewage disposal debentures having a par value of \$3,134,000. ⁷ Excludes guaranteed interest under the School Borrowing Assistance Act and the School Buildings Assistance Act on principal borrowings of \$15,102,000; includes guarantee of debentures issued by the Alberta Municipal Financing Corporation to finance the purchase of municipal debentures—see footnote 1, Table 38.

Subsection 3.—Statistics of Provincial Government Enterprises

The first report on the financial statistics of provincial government business enterprises, covering the years 1958 to 1961, was released in early 1964 (Catalogue No. 61-204), a sequel to the publication dealing with the finances of Federal Government enterprises. It follows the same concepts and classification schema, presenting the data comparatively, industrially and geographically. Table 33, gives assets, liabilities and net worth of such enterprises as at the fiscal year ends nearest to Dec. 31, 1958-61.

33.—Assets, Liabilities and Net Worth of Provincial Government Enterprises, as at Fiscal Year Ends Nearest Dec. 31, 1958-61

Item	1958	1959	1960	1961
	\$'000	\$'000	\$'000	\$'000
Assets				
Cash.....	63,014	134,407	98,946	141,672
Accounts receivable.....	70,985	75,268	79,380	95,143
Inventories.....	143,263	135,324	132,394	140,206
Interest, dividends and rents receivable.....	254	451	321	1,174
Accrued revenue (interest owing from federal, provincial and municipal governments, etc.).....	9,408	11,361	14,016	16,637
Prepaid expenses.....	2,832	2,576	2,942	3,847
Fixed assets.....	4,116,029 ¹	4,494,937 ¹	4,815,066 ¹	5,819,382 ¹
Loans and advances receivable from governments, etc.....	156,161	216,285	279,216	327,842
Securities held as investments.....	84,348	107,816	86,289	101,301
Mortgages receivable and agreements of sale.....	5,367	8,984	14,708	22,187
Depreciation funds, trust and deposit accounts and other restricted funds.....	217,522	246,283	289,801	336,943
Deferred charges.....	248,107	271,500	267,321	272,734
Other assets.....	9,344	11,919	10,873	12,331
Totals, Assets.....	5,126,634	5,717,111	6,091,273	7,290,899
Liabilities and Net Worth				
Accounts payable.....	72,669	56,552	58,732	85,990
Temporary loans, advances and notes payable.....	178,487	170,317	181,055	194,727
Interest payable.....	921	1,058	331	364
Accrued expenditure (interest owing, provision for income tax and other).....	54,277	59,501	63,165	76,053
Long-term loans and advances owing.....	1,153,373	1,265,258	1,329,329	1,363,992
Long-term debt (bonds, debentures, mortgages and agreement for sale and other).....	2,460,282 ²	2,863,377 ²	3,080,363 ²	4,055,827 ²
Deferred credits.....	8,331	9,086	9,724	10,692
Trust and deposit accounts.....	7,484	15,214	15,619	13,700
Liability reserves.....	25,388	29,530	30,760	31,102
Other liabilities.....	8,634	7,761	6,203	15,051
Proprietary equity (net worth).....	1,156,788	1,239,457	1,315,992	1,443,401
Totals, Liabilities and Net Worth.....	5,126,634	5,717,111	6,091,273	7,290,899
Current Revenue				
Revenue from sales and services on current operations.....	1,085,625	1,156,290	1,236,536	1,373,576
Financial income.....	23,576	30,171	35,368	41,818
Interest.....	20,169	25,167	31,632	37,205
Other.....	3,407	6,004	5,686	4,613
Rental income.....	1,007	1,234	1,502	1,810
Contributions from provincial governments.....	1,102	473	563	444
Other current income.....	4,198	4,735	4,882	5,284
Totals, Current Revenue.....	1,115,508	1,192,903	1,278,851	1,422,932
Current Expenditure				
Cost of goods and services sold from current operations.....	644,310	687,115	729,393	787,290
Wages and salaries.....	163,373	180,432	195,563	220,180
Net drawing on (+) or net additions to (-) inventories.....	1,962	7,939	2,631 ³	-3,886 ³
Other purchases of goods and services.....	478,975	498,744	631,199	670,396

For footnotes, see end of table.

33.—Assets, Liabilities and Net Worth of Provincial Government Enterprises, as at Fiscal Year Ends Nearest Dec. 31, 1958-61—concluded

Item	1958	1959	1960	1961
	\$'000	\$'000	\$'000	\$'000
Current Expenditure—concluded				
Provision for depreciation.....	82,005	88,182	99,993	115,802
Interest on debt.....	103,696	130,425	162,342	199,314
Other current expenditure.....	14,018	17,523	19,713	19,191
Totals, Current Expenditure.....	844,029	923,245	1,011,441	1,121,597
Net profit before provision for income tax.....	271,479	269,658	267,410	301,335
Estimated income tax.....	—	—	15	—
Net profit after provision for income tax.....	271,479	269,658	267,395	301,335
Totals, Current Expenditure plus Net Profit..	1,115,508	1,192,903	1,278,851	1,422,932

¹ Includes physical property held for sale and an undetermined amount of interest capitalized during construction.
² Of these amounts, \$2,432,307,000, \$2,795,952,000, \$3,028,071,000 and \$4,013,074,000, respectively, are guaranteed by provincial governments.
³ These amounts differ by —\$299,000 and \$4,526,000, respectively, from change in asset item "Inventories", by reason of the closing out of one establishment of an enterprise and the acquisition of a private company.

Section 5.—Municipal Public Finance

Subsection 1.—Municipal Assessed Valuations and Taxation

Table 34 shows municipal assessed valuations and total exemptions, by province, for the year 1960 together with local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Assessment figures in the various provinces are not entirely comparable as there are still variations in methods, schedules and rates, not only between provinces but also between municipalities within the same province.

34.—Municipal Assessed Valuations and Taxation, by Province, 1960

Item	Newfoundland ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Assessed Valuations						
Taxable Valuations on which Taxes are Levied—						
Real property..... \$'000	8,417	36,778	770,713	512,678	8,778,072	8,376,297
Personal property.....	—	7,638	134,792	113,784	..	..
Business..... "	3,359	8,210	31,748	34,300	..	1,038,717
Other ² "	—	—	312	3,902	—	—
Totals..... \$'000	11,776	52,626	937,565	664,664	..	9,413,014
Total exemptions³..... \$'000	..	10,000⁴	420,762	..	2,589,513⁵	1,693,353⁴
Taxation						
Tax levy..... \$'000	4,306	2,446	36,095	28,663	370,310	592,378
Tax Collections, Current and Arrears—						
Total..... \$'000	3,715	2,386	34,465	27,810	..	580,011
Percentage of levy..... p.c.	86.28	97.55	95.48	97.02	..	97.91
Taxes receivable, current and arrears..... \$'000	1,362	748	11,409	10,168	60,029	62,142
Percentage of levy..... p.c.	31.63	30.58	31.61	35.47	16.21	10.49

For footnotes, see end of table, p. 1006.

34.—Municipal Assessed Valuations and Taxation, by Province, 1960—concluded

Item	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon ⁶	N.W.T. ⁷
Assessed Valuations						
Taxable Valuations on which Taxes are Levied—						
Real property..... \$'000	1,081,853	1,176,113	1,658,345	1,843,967	11,735	4,203
Personal property..... "	12,634	—	—	—	—	—
Business..... "	49,309	60,662	80,818	—	—	2,506
Other ² "	—	318	—	—	—	—
Totals..... \$'000	1,143,796	1,237,093	1,739,163	..	11,735	6,709
Total exemptions ³ \$'000	240,942	612,765	347,022 ⁴	553,396 ⁵	5,459	3,730
Taxation						
Tax levy..... \$'000	67,964	81,338	111,907	128,554	173	330
Tax Collections, Current and Arrears—						
Total..... \$'000	65,886	79,825	109,536	128,105	165	267
Percentage of levy..... p.c.	96.94	98.14	97.88	99.65	95.38	80.91
Taxes receivable, current and arrears..... \$'000	12,115	19,566	22,334	6,911	64	75
Percentage of levy..... p.c.	17.83	24.06	19.96	5.38	36.99	22.73

¹ City of St. John's only.² Includes: N.S.—household tax, Halifax; N.B.—occupancy tax, Fredericton, and rentals tax, Moncton; Sask.—special franchise.³ Total of valuations assessed but exempt from taxation; excludes exempt property not assessed.⁴ Incomplete.⁵ Excludes permissive exemptions.⁶ Whitehorse only.⁷ Yellowknife only.⁸ Excludes partial statutory and permissive exemptions.

Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, extreme caution should be exercised in using the figures in Table 34 as a basis for interprovincial comparisons of the relative burden of municipal taxation. Also, in Saskatchewan municipalities are required to levy certain taxes for and on behalf of hail insurance associations and rural telephone companies and for other special purposes for which there is no comparable situation in other provinces. The amounts of such taxes excluded in the Saskatchewan municipal levies in Table 34 are: hail, \$2,802,426; telephone, \$1,022,663; and drainage, \$143.

Subsection 2.—Municipal Revenue, Expenditure and Debt

Tables 35, 36 and 37 show comparative totals and details of gross ordinary revenue and expenditure of municipal governments, by province. Table 38 sets out the direct and indirect debt of local governments for the year 1960. The amounts shown include debt incurred for general and school purposes, debenture debt incurred for and by utilities, and debenture debt incurred by certain special areas organized to provide specific local services.

35.—Gross Ordinary Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1960

Province	Gross Ordinary Revenue	Gross Ordinary Expenditure	Province or Territory	Gross Ordinary Revenue	Gross Ordinary Expenditure
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	6,491	6,350	Saskatchewan.....	108,479	109,798
Prince Edward Island.....	3,126	3,119	Alberta.....	165,601	165,079
Nova Scotia.....	46,879	47,112	British Columbia.....	184,385	181,198
New Brunswick.....	41,218	40,398	Yukon Territory.....	360	361
Quebec.....	428,541	425,735	Northwest Territories.....	550	520
Ontario.....	790,704	782,671			
Manitoba.....	87,216	86,946	Totals.....	1,863,550	1,849,287

36.—Details of Gross Ordinary Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1969

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—													
General and School—													
Real property.....	2,473	1,807	26,882	19,552	220,100	571,714	58,473	75,901	95,740	117,851	142	257	1,188,892
Personal property.....	4	251	5,987	4,737	...	...	...	...	...	...	...	...	10,979
Business.....	915	226	1,483	1,867	23,592	1	5,269	...	6,720	3,509	...	2	43,581
Poll.....	142	155	1,260	2,269	...	134	6	1,184	...	...	...	7	5,157
Amusement.....	78	...	...	...	1,538	...	...	...	...	...	...	...	1,783
Sales.....	419	...	...	...	80,235	...	434	167	...	...	...	...	81,655
Household and tenant.....	...	...	...	3	...	...	...	...	...	...	...	...	6
Other.....	22	...	71	150	3,546	...	61	422	...	51	...	...	4,323
Special assessments (owners' share) and charges.	253	7	406	88	41,299	20,530	5,721	3,097	9,447	7,143	31	56	88,088
Totals, Taxes.....	4,306	2,446	36,095	28,663	370,310	592,378	67,964	81,338	111,907	128,554	173	330	1,424,464
Licences and permits.....	147	55	421	250	5,294	6,907	1,504	1,974	2,369	6,201	22	8	25,152
Interest, tax penalties, etc.....	10	3	464	257	5,498	6,231	1,355	1,615	1,752	2,371	2	3	19,561
Contributions, Grants and Subsidies—													
Governments.....	1,561	435	6,489	10,531	17,274	134,520	9,124	12,935	28,866	29,912	155	199	252,001
Government enterprises.....	58	85	773	430	12,095	6,779	2,526	5,173	9,583	3,331	—	2	40,835
Other.....	130	5	340	74	1,821	739	366	650	198	1,055	—	—	5,378
Miscellaneous revenue.....	279	61	1,575	718	12,445	33,137	2,188	4,525	10,244	11,786	4	8	76,970
Totals, Revenue.....	6,491	3,090	46,157	40,923	424,737	790,691	85,027	108,210	164,919	183,210	356	550	1,844,361
Surplus from previous years.....	—	36	722	295	3,804	10,013	2,189	269	682	1,175	4	—	19,189
Grand Totals.....	6,491	3,126	46,879	41,218	428,541	790,704	87,216	108,479	165,601	184,385	360	550	1,863,550

¹ Included with real property.² Less than \$500.³ Included with business.

37.—Details of Gross Ordinary Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1960

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General government.....	771	221	3,172	2,949	40,408	50,015	5,588	6,985	8,788	10,543	44	64	129,498
Protection of persons and property.....	340	344	5,922	4,309	52,732	96,160	10,865	7,559	17,048	26,186	53	29	221,547
Public works.....	1,713	329	2,630	2,933	57,959	119,502	14,465	24,210	25,291	15,684	76	44	284,836
Sanitation and waste removal.....	582	20	1,084	635	9,445	34,492	3,309	2,597	5,408	6,286	26	37	63,921
Health.....	15	1	2,676	975	8,848	14,583	1,670	6,145	7,474	2,294	1	12	44,693
Social welfare.....	...	48	2,453	1,986	6,872	43,241	3,559	5,576	4,066	18,718	...	52	86,571
Education.....	214	1,412	20,484	18,925	157,709	264,701	30,176	40,004	54,266	56,968	...	151	645,010
Recreation and community services.....	156	65	1,193	833	11,264	29,544	2,305	2,943	5,365	8,699	11	14	62,412
Debt Charges— Debt service and other long term.....	767	451	4,414	4,385	55,618	63,456	6,847	4,935	19,411	23,518	35	34	183,871
Other.....	116	72	762	337	1,333	10,530	194	599	477	596	1	1	15,016
Utilities and other municipal enterprises (deficits and levies).....	375	13	56	147	1,402	10,963	1,154	1,400	2,868	1,782	35	17	20,202
Provision for reserves.....	81	49	892	726	2,710	6,868	1,979	1,353	1,413	2,432	20	4	18,527
Contributions to capital and loan fund.....	1,081	80	648	380	15,731	19,024	2,941	3,624	8,698	6,464	56	51	58,778
Joint or special expenditure.....	—	—	—	17	—	6,500	400	—	1,066	18	—	—	7,991
Miscellaneous expenditure.....	139	14	466	837	3,704	11,012	583	1,723	3,356	1,008	5	11	22,858
Totals, Expenditure.....	6,350	3,119	46,852	40,374	425,735	750,551	86,035	109,653	164,955	151,196	361	520	1,845,731
Deficit from previous years.....	—	—	280	24	—	2,090	911	145	124	2	—	—	3,556
Grand Totals.....	6,350	3,119	47,112	40,398	425,735	752,671	86,946	109,798	165,079	151,198	361	520	1,849,287

1 Less than \$500.

38.—Debt of Municipal and School Corporations, as at Fiscal Year Ends Nearest Dec. 31, 1960

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt (less Sinking Funds)—													
Debtenture debt.....	16,885	8,330	89,111	90,897	1,324,219	1,558,233	159,851	145,073	432,588	452,063	987	218	4,278,455
Less sinking funds.....	134	1,482	6,944	7,553	15,636	46,066	16,630	8,379	3,614	45,638	—	—	152,076
Net debtenture debt.....	16,751	6,848	82,167	83,344	1,308,583	1,512,167	143,221	136,694	428,974	406,425	987	218	4,126,379
Temporary loans and bank overdrafts.....	203	844	15,089	6,099	110,365	91,038	16,025	7,951	10,769	5,272	3	—	263,658
Accounts payable and other liabilities.....	2,644	367	10,604	7,549	114,318	142,325	13,165	20,366	42,219	27,214	111	92	380,974
Totals, Direct Debt (less Sinking Funds).....	19,598	8,059	107,860	96,992	1,533,266	1,745,530	172,411	165,011	481,962¹	438,911	1,101	310	4,771,011
Indirect Debt (less Sinking Funds)—													
Guaranteed bonds or debentures.....	—	—	1,407	4,286	60,497 ²	4,860	2,828	—	—	—	—	—	73,878
Less sinking funds.....	—	—	262	—	1,293	—	—	—	—	—	—	—	1,555
Net guaranteed bonds or debentures.....	—	—	1,145	4,286	59,204	4,860	2,828	—	—	—	—	—	72,323
Guaranteed bank loans.....	—	—	—	—	—	—	—	—	13	—	—	—	13
Totals, Indirect Debt (less Sinking Funds).....	—	—	1,145	4,286	59,204	4,860	2,828	—	13	—	—	—	72,336
Grand Totals.....	19,598	8,059	109,005	101,278	1,592,470	1,750,390	175,239	165,011	481,975	438,911	1,101	310	4,843,347

¹ Includes debentures sold to the Alberta Municipal Financing Corporation; see footnote 9, Table 32.
² Debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.

CHAPTER XXII.—NATIONAL ACCOUNTS, INDUSTRY PRODUCTION TRENDS, BALANCE OF INTERNATIONAL PAYMENTS AND INTERNATIONAL INVESTMENTS*

CONSPECTUS

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SECTION 1. NATIONAL ACCOUNTS.....	1010	SECTION 3. CANADIAN BALANCE OF INTERNATIONAL PAYMENTS.....	1027
SECTION 2. INDUSTRY PRODUCTION TRENDS..	1020	SECTION 4. CANADA'S INTERNATIONAL INVESTMENT POSITION.....	1034

The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

In this Chapter various statistical statements and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. These integrated aggregative economic accounts provide an inter-related framework for economic analysis and the observation of changes in the functioning of the Canadian economy and its structure and in economic and financial relationships with other countries.

Section 1.—National Accounts

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to businessmen concerned with problems of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 4 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. In all other tables the data are expressed in current dollars so that year-to-year changes must be considered in relation to price changes over the period.

National accounts calculated on a quarterly basis are a logical extension of the annual national accounts and have been published since 1953. However, their preparation on a reliable and analytically useful basis is rather more difficult because of the scarcity of quarterly data, special problems arising from the measurement of farm production and problems in connection with seasonal variation.

* Prepared in the National Accounts and Balance of Payments Division, Dominion Bureau of Statistics.

The tables on pp. 1016-1017 cover the more important aspects of the national income analysis in annual terms. Table 1 gives total gross national product in current and constant dollars for the years 1926-62. Tables 2 and 3 show the main aggregates of national income, gross national product, gross national expenditure and their components; other tables are included to show the source and disposition of personal income and expenditure and government revenue and expenditure.

National Income.—Net national income at factor cost measures the current earnings of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross National Product.—Gross national product, by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

Personal Income.—Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.—Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to non-residents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

Economic Activity in 1962.—The economic expansion that began in 1961 continued in 1962 when gross national product rose to \$40,401,000,000, an 8-p.c. advance over the previous year. This increase represented the largest year-to-year gain since 1956 when the economy was stimulated by an exceptionally high level of capital expenditure. Price increases were moderate in 1962, accounting for less than 2 p.c. of the increase in gross national product, leaving a gain in volume of a little more than 6 p.c.

All the main components of gross national expenditure contributed to the increase in the aggregate. Consumer spending, which rose more than 5 p.c., was a major expansionary influence. The strength in the consumer sector was particularly evident in the first and last quarters of the year; purchases of durables, notably passenger cars, were especially heavy in the fourth quarter. The increase in consumer spending was accompanied by a large rise in personal income and personal saving. Investment in fixed capital resumed its upward course, the bulk of the increased outlays being for machinery and equipment. Except in the third quarter, the accumulation of business inventories made only a modest contribution to the expansion of economic activity. With a near-record crop in 1962, in contrast to a poor crop in 1961, there was a considerable accumulation of farm inventories in place of the liquidation of a year earlier. Largely in response to a higher level of demand in the United States, exports of goods and services were up nearly 8 p.c. while imports also rose but not to the same extent; these increases reflected, in part, the lower exchange value of the Canadian dollar. Government expenditure was up substantially, mainly reflecting larger outlays at the provincial-municipal level. However, the deficit of all governments combined declined significantly.

The salient developments on the income side were a 7-p.c. rise in labour income, a 13-p.c. increase in corporate profits, and a sharp expansion in accrued farm income, largely a reflection of a near-record crop. Personal income rose at about the same rate as national income.

All the major components of demand showed price increases, ranging from 1.5 p.c. in consumer expenditure to 3.7 p.c. in government expenditure. Prices of imports rose 4.4 p.c., largely as a result of the depreciation of the Canadian dollar. This increase is not reflected in the over-all implicit price index of gross national expenditure since imports are excluded by definition from Canada's gross national product.

Production and Employment

Real output for 1962 was higher by just over 6 p.c. than the corresponding figure for 1961. If agriculture is excluded, the increase amounted to about 5 p.c. The 8-p.c. gain in the goods-producing industries is reduced to 7 p.c. in the same manner.

Manufacturing, with an 8-p.c. gain, was the largest single contributor to the expansion during 1962, accounting for approximately one third of the total increase. The considerable advance (11 p.c.) in the cyclically volatile durables component formed the basis for this growth, with particular strength occurring in the transportation equipment and the electrical apparatus and supplies groups. Iron and steel and non-metallic mineral products increased by 9 p.c. each. Non-durable manufacturing continued to expand in 1962, showing a 5-p.c. increase over 1961, with the largest gain of any major industry group in textile products (8 p.c.), and the smallest (2 p.c.) in the leather and clothing products groups.

Considerable gains were also made in mining and forestry, which increased by about 7 p.c. each, while construction expanded by 2 p.c.

The service-producing industries showed a 4-p.c. gain, about two fifths of which was accounted for by a considerable increase in wholesale trade (8 p.c.) and retail trade (4 p.c.), which paralleled the rapid expansion in manufacturing output. The most significant development within retail trade was an 11-p.c. increase in the motor vehicle dealer component. Oil and gas pipeline transport accounted for about half of the 4-p.c. increase in transportation, as the growth in output of this industry was well above average. The only major decline (12 p.c.) occurred in storage, largely as a result of declines in the volume of receipts and shipments at grain elevators during the first part of the year. Public administration and defence showed a smaller-than-average gain (2 p.c.), while electric power and gas utilities increased by 6 p.c. The remaining service-producing industries continued their steady advance, increasing by approximately 4 p.c.

The market for labour improved in 1962. The total number of employed persons increased by nearly 3 p.c., and the non-agricultural component of this number increased 3.5 p.c. In contrast to the previous year when the rate of rise in the employment of women substantially exceeded that of men, both men and women shared equally in the 1962 increase. Gains in employment occurred in all industries except agriculture and other primary industries, the largest being in construction and non-government service (community, business, personal, and recreational service). The average rate of unemployment in 1962 was 5.9 p.c. of the labour force, compared with the rate of 7.2 p.c. in 1961.

The Components of Demand

Consumer expenditure rose to \$25,749,000,000 in 1962, a gain of more than 5 p.c. over the previous year. This increase was associated with a strong upward movement in personal disposable income and was accompanied by a higher level of personal saving.

The expansion in personal expenditure, which took place mainly in the first and final quarters of the year, was the largest since 1959. It was attributable mainly to a particularly sharp increase in net purchases of new and used automobiles—motor vehicle dealers'

sales rose by 11 p.c. Purchasing of durable goods in total was higher by 8 p.c. in 1962 in contrast to the lack of any strong movement in either of the years 1960 and 1961; prices were unchanged, indicating an equivalent rise in volume. Consumer spending on non-durable goods also rose but more in line with the annual increases experienced in recent years; an increase of 5 p.c. from 1961 to 1962 compared with 4 p.c. in the two previous years. A part of this slightly larger increase reflected the first full year's impact of the Ontario sales tax which was introduced in September 1961. Spending on food, tobacco and alcohol all contributed to the over-all picture of strength as their rate of increase was significantly higher than between 1960 and 1961. Price increases of about 1 p.c. associated with consumer goods in total were mainly a reflection of price increases in non-durable goods.

The slackening rate of increase in personal expenditure on services, apparent in recent years, continued in 1962—expenditures rose by 4.5 p.c. In part, this reflected significant movements in personal spending of non-residents in Canada and of Canadians travelling abroad. Abstracting this influence, outlays for services increased by 6 p.c. The increases were general, although a diminished rate of growth in spending on shelter was noticeable as increases in rental rates became less pronounced, a tendency apparent since 1960.

Capital expenditure in 1962 amounted to \$6,954,000,000, nearly 5 p.c. higher than in the previous year. Roughly similar rates of increase (over 8 p.c.) occurred in outlays for housing and for machinery and equipment; expenditure on non-residential construction showed little change.

The rise in fixed capital formation in 1962, mainly a result of the strength in demand for producers' durable equipment, occurred in the first three quarters of the year. This strength was centred in the primary metal manufacturing industries, mining and agricultural sectors of the economy, the last probably reflecting to some extent spending from the higher farm incomes received during the year. Although there was little change from 1961 to 1962 in the value of construction of non-residential buildings and works, there were offsetting movements within the year. Expansion took place in spending for plant and equipment by manufacturers; the utilities spending program appeared on balance slightly lower, with increased spending by electric power and telephone utilities more than offset by completion of a large-scale pipeline construction program. Offsets also occurred between higher outlays by the agricultural and fishing industries and lower spending by the mining industry.

The rise in housing expenditure in 1962 reflected not only a higher number of housing starts but a larger carry-over of houses under construction at the beginning of 1962 than in the previous year. Starts rose from 125,577 in 1961 to 130,095 in 1962, approximately 4 p.c., while completions were higher by 9.5 p.c., increasing from 115,608 in 1961 to 126,682 in 1962. An increase in starts of rental dwellings more than offset a decline in starts of dwellings for home-ownership; partly associated with this trend was an increase in conventional mortgage lending and a shift away from financing under the National Housing Act.

Investment in business inventories played only a small part in the expansion of gross national product in 1962. For the year as a whole the addition to stocks amounted to \$375,000,000, although in the third quarter of the year stock-building at an annual rate of \$800,000,000 was very important.

The largest build-up of stocks occurred in manufacturing industries, with widespread accumulation in both durable and non-durable lines. The ratio of stocks to shipments throughout the year remained below the average of the previous year.

The accumulation of stocks in wholesale trade was virtually negligible, the liquidation in the first half of the year being largely offset by accumulation in the second. There was a considerable accumulation of stocks in the hands of retail dealers. Most of this accumulation was in the hands of automotive dealers, where sales were sharply higher and stocks had been drawn down slightly in the previous year.

Some of the most notable developments of the year occurred in the field of foreign trade where both exports and imports of goods and services rose to record levels. Exports amounted to \$8,221,000,000, close to 8 p.c. higher than in 1961, the rate of increase for goods being somewhat higher than for services. At the same time, imports of goods and services reached a value of \$9,033,000,000, nearly 6 p.c. above the level of 1961; all the increase was in the merchandise part of the account. The result was that the deficit on international current account fell from about \$911,000,000 to about \$809,000,000, all of the improvement occurring in the non-merchandise items.

The pattern of trade in 1962 was affected, among other things, by the stabilization of the Canadian dollar in May at 92.5 cents in terms of United States currency. Furthermore, the foreign exchange crisis in June 1962 culminated in government action to relieve pressure on the Canadian dollar, to bring about a greater stabilization in Canada's international transactions, and to strengthen the exchange reserves. The net effect of these factors in terms of Canadian production was to contribute to an increase in exports of Canadian goods and services and to lower the portion of domestic demand being met from foreign sources. The deficit with non-residents on current account, on a year-to-year basis, showed a fairly small change but within the year it declined progressively from just over \$1,000,000,000 in the first quarter to less than half that in the final quarter, although some of this improvement may have resulted from a decline in imports from an irregularly high third-quarter level.

The rise in exports of goods occurred mainly in the second quarter of the year, but the high level was sustained throughout the remainder of the year. It was attributable in part to the economic expansion in the United States (the increase in exports to the United States on a year-to-year basis was greater than the total increase in exports), in part to the effect of changes in the exchange rate, and in part to aggressive export sales promotion by both business and government. Although newsprint and wheat remained the two principal commodity exports, the level of exports for both of these was lower than in 1961. The major gains were in sales abroad of iron ore, crude petroleum and natural gas. Of less importance in dollar terms, but items in which very substantial advances were recorded, were non-farm machinery, aircraft and parts, aluminum and lumber and products. Almost three quarters of the increase in exports was attributable to the commodity groups noted above.

Receipts for services also rose sharply in the second quarter and then remained at the new high level. This increase was due primarily to the increased travel expenditures of foreigners, encouraged in part by the more favourable rate of exchange, and to an increase in receipts of interest, and from freight and shipping services resulting from the increased volume of merchandise exports, such as iron ore, petroleum and natural gas.

Imports of goods rose through the first three quarters of the year, despite an unfavourable exchange rate which raised the price of imports to Canadians, and despite the imposition of an import surcharge on certain classes of goods at mid-year which had the same effect. However, in the final quarter of the year imports fell off sharply, reflecting in part the earlier changes, including the unusually high level of the previous quarter. Even with this decline at the year-end, imports of goods for the year were the highest on record, although some of the increase, as in exports, was due to the change in the exchange rate. The figures indicate a particularly sharp pick-up in non-farm machinery, electrical apparatus and automobile parts, all of which are consistent with the strong demand, noted earlier, for producers' durables and automobiles. However, increases in the level of imports were general and occurred in almost all classes of goods. About 80 p.c. of the increase in merchandise imports arose from increased purchases from the United States.

Payments for services rose to a peak in the second quarter of 1962, reflecting accelerated transfer of interest and dividends on non-resident investment, larger payments for business services and the continued high level of Canadians' travel expenditures abroad; they fell

back in the third quarter and remained stable in the latter part of the year. The reductions were largely a result of lower travel expenditures, a reduced rate of payments of dividends, and a decline in miscellaneous expenditures.

The Government Sector

At \$7,721,000,000, expenditures on goods and services of all levels of government combined, excluding inter-governmental transfers, were 7 p.c. higher in 1962, with divergent movements concealed in the total figure. Purchases by provincial and municipal governments rose by over 11 p.c., reflecting the increased building of vocational schools under the federal-provincial cost-sharing plan; this increase is in contrast to the small gain at the federal level, where a 4-p.c. expansion of defence outlays was almost offset by a fall in non-defence expenditures. Within 1962, total government purchases rose sharply from the first to the second quarter but declined gradually thereafter, reflecting the contraction in spending by the Federal Government.

Transfer payments to persons from all governments advanced by more than 7 p.c. At the federal level, primarily because of the increase in monthly payments from \$55 to \$65 in February 1962, the payments from the Old Age Security Fund rose by nearly 20 p.c. This increase was offset largely by a decline of more than 17 p.c. in unemployment insurance benefits, reflecting the improved employment situation. Provincial transfers to hospitals under the Hospital Insurance and Diagnostic Services Act were higher by almost 10 p.c. Subsidies paid by the Federal Government showed an increase of nearly 18 p.c., principally because of the loss incurred by the Agricultural Commodities Stabilization Board.

At the combined level, all revenue components showed increases in 1962 over the previous year. Federal indirect tax revenue was up almost 10 p.c., reflecting in part the imposition of the temporary surcharges announced in June 1962 and the rise in the value of imports between the two years. There was an increase in indirect taxes of more than 13 p.c. at the provincial-municipal level, including increases in receipts from provincial sales tax of over 60 p.c. (mainly because of the introduction of a sales tax in Ontario in September 1961), from provincial gasoline taxes of over 7 p.c., and from municipal real property taxes of about 8 p.c.

Where there was a considerable rise in total expenditures of all governments combined, the increase in revenues was even larger, with the result that the deficit on a national accounts basis declined significantly from \$905,000,000 in 1961 to \$770,000,000 in 1962.

Income Flows

In 1962, labour income reached an estimated total of \$20,359,000,000, nearly 7 p.c. higher than in the previous year, reflecting an expansion in employment and a further rise in wage rates. Labour income rose most rapidly in the early part of the year. As in the recent past, the largest gains in labour income among the major industries occurred in the non-government service group (close to 11 p.c.). The next highest rate of change was in construction (more than 8 p.c.).

In 1962, more than 42 p.c. of wages and salaries originated in goods-producing industries and the remainder in service-producing industries, in contrast to the beginning of the post-war period when the contribution of the two segments to the total was about equal. This changed relationship reflects the tendency for wages and salaries to rise more rapidly in the service-producing than in the goods-producing industries.

Estimated at \$3,254,000,000, corporation profits (before taxes and before dividends paid to non-residents) continued to remain at record levels in 1962. During the first three quarters of the year, profits tended to level off at the peak attained in 1961, but showed a gain in the fourth quarter; for the year as a whole, they increased by 10.5 p.c. All industries

showed strength except wholesale trade, and finance, insurance and real estate. Manufacturing—particularly metal industries (including transportation equipment)—mining, quarrying and oil wells, and retail trade showed notable gains.

Rent, interest, and miscellaneous investment income rose by about 5 p.c. in 1962. All components showed gains except net residential non-farm rents (paid and imputed), which were estimated to have fallen as the rate of increase in gross rents slowed down although operating expenses indicated no such change. The trading profits of government business enterprises showed a substantial increase of about 9 p.c. in the year. Interest, dividends and net rental income of persons was up about 7 p.c., mainly as a result of a rise in bond interest and in dividends received.

Accrued net income of farm operators reached a level of \$1,391,000,000 in 1962, over 42 p.c. higher than the estimate for 1961 and the highest level attained since the mid-1950's. Although cash receipts from the sale of farm products were at an all-time high, the largest part of the increase in accrued net income may be attributed to the greatly increased production of grains in Western Canada, resulting in a build-up of inventories on farms. The 1962 estimate of the value of crop production was \$1,175,000,000, about \$550,000,000 higher than the 1961 estimate. Farm cash receipts, the largest component of farm net income, increased over 4 p.c. Major items contributing to the increase were larger participation payments by the Canadian Wheat Board and higher returns from the sale of wheat, oats, cattle and calves, poultry, and dairy products. Farm operating expenses showed a further increase in 1962, slightly dampening the increase in gross income. Contributing to the increase were substantially higher outlays for farm rents, livestock feeds, and the operation of farm machinery, including repairs.

In a comparison with the year 1961, net income of non-farm unincorporated business increased 4 p.c. in 1962 to a level of \$2,380,000,000. Net income in most industry groups showed some increase, the greatest increases occurring in the retail trade, construction, community service and fishing industries. Slight declines were registered in the transportation and finance industries.

1.—Gross National Product, in Current and Constant (1949) Dollars, 1926-62

Year	Millions of Current Dollars	Millions of Constant (1949) Dollars	Year	Millions of Current Dollars	Millions of Constant (1949) Dollars
1926.....	5,152	7,576	1946.....	11,850	15,251
1927.....	5,549	8,270	1947.....	13,165	15,446
1928.....	6,046	9,037	1948.....	15,120	15,735
1929.....	6,134	9,061	1949.....	16,343	16,343
1930.....	5,728	8,679	1950.....	18,006	17,471
1931.....	4,699	7,567			
1932.....	3,827	6,798	1951.....	21,170	18,547
1933.....	3,510	6,359	1952.....	23,995	20,027
1934.....	3,984	7,127	1953.....	25,020	20,794
1935.....	4,315	7,678	1954.....	24,871	20,186
			1955.....	27,132	21,920
1936.....	4,653	8,022			
1937.....	5,257	8,820	1956.....	30,585	23,811
1938.....	5,278	8,871	1957.....	31,909	24,117
1939.....	5,636	9,536	1958.....	32,894	24,397
1940.....	6,743	10,911	1959.....	34,915	25,242
			1960.....	36,254	25,805
1941.....	8,328	12,486			
1942.....	10,327	14,816	1961.....	37,421	26,468
1943.....	11,088	15,357	1962.....	40,401	28,111
1944.....	11,850	15,927			
1945.....	11,835	15,552			

2.—National Income and Gross National Product, by Component, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122; for 1954 in the 1959 edition, p. 1089; for 1955 in the 1960 edition, p. 1116; and for 1956 and 1957 in the 1961 edition, p. 1091.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Wages, salaries and supplementary labour income.....	16,521	17,459	18,251	19,068	20,359
Military pay and allowances.....	491	496	509	550	586
Corporation profits before taxes ¹	2,605	3,003	2,905	2,873	3,254
Rent, interest and miscellaneous investment income.....	2,104	2,315	2,442	2,628	2,768
Accrued net income of farm operators from farm production ²	1,200	1,121	1,184	975	1,391
Net income of non-farm unincorporated business ³	2,125	2,210	2,213	2,289	2,380
Inventory valuation adjustment.....	-35	-122	-80	-67	-132
Net National Income at Factor Cost.....	25,011	26,482	27,424	28,316	30,606
Indirect taxes less subsidies.....	3,882	4,259	4,470	4,716	5,261
Capital consumption allowances and miscellaneous valuation adjustments.....	3,899	4,204	4,459	4,539	4,755
Residual error of estimate.....	102	-30	-99	-150	-221
Gross National Product at Market Prices.....	32,894	34,915	36,254	37,421	40,401

¹ Excludes dividends paid to non-residents.
net income of independent professional practitioners.

² Includes changes in farm inventories.

³ Includes

3.—Gross National Expenditure, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124; for 1954 in the 1959 edition, p. 1089; for 1955 in the 1960 edition, p. 1117; and for 1956 and 1957 in the 1961 edition, p. 1092.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Personal expenditure on consumer goods and services.....	21,245	22,591	23,512	24,486	25,749
Government expenditure on goods and services.....	6,180	6,490	6,755	7,205	7,721
Current expenditure.....	4,791	4,967	6,185	5,668	5,937
Gross fixed capital formation.....	1,389	1,523	1,570	1,537	1,784
Business gross fixed capital formation.....	6,975	6,894	6,692	6,635	6,954
New residential construction.....	1,763	1,734	1,443	1,468	1,577
New non-residential construction.....	2,811	2,639	2,577	2,683	2,668
New machinery and equipment.....	2,401	2,571	2,672	2,494	2,709
Change in inventories.....	-322	357	361	-144	565
Non-farm business inventories.....	-197	421	275	276	375
Farm inventories and grain in commercial channels.....	-125	-64	86	-420	190
Exports of goods and services.....	6,340	6,683	7,008	7,631	8,224
Deduct: Imports of goods and services.....	-7,423	-8,131	-8,172	-8,542	-9,033
Residual error of estimate.....	-101	31	98	150	221
Gross National Expenditure at Market Prices.....	32,894	34,915	36,254	37,421	40,401

4.—Gross National Expenditure in Constant (1949) Dollars, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124; for 1954 in the 1959 edition, p. 1090; for 1955 in the 1960 edition, p. 1117; and for 1956 and 1957 in the 1961 edition, p. 1092.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Personal expenditure on consumer goods and services.....	16,585	17,392	17,908	18,480	19,157
Government expenditure on goods and services.....	4,093	4,155	4,188	4,383	4,528
Current expenditure.....	5,044	5,055	5,059	5,222	5,255
Gross fixed capital formation.....	1,056	1,109	1,141	1,169	1,285
Adjusting entry.....	-7	-9	-12	-8	-12
Business gross fixed capital formation.....	4,761	4,575	4,345	4,270	4,365
New residential construction.....	1,219	1,157	937	941	989
New non-residential construction.....	1,884	1,683	1,637	1,698	1,654
New machinery and equipment.....	1,650	1,735	1,770	1,626	1,717
Adjusting entry.....	8	—	1	6	5
Change in inventories.....	-286	308	314	-130	500
Non-farm business inventories.....	-158	554	219	220	290
Farm inventories and grain in commercial channels.....	-141	-21	89	-497	228
Adjusting entry.....	13	65	6	147	-18
Exports of goods and services.....	5,368	5,574	5,806	6,240	6,517
Deduct: Imports of goods and services.....	-6,150	-6,776	-6,743	-6,823	-6,911
Residual error of estimate.....	-74	22	69	106	153
Adjusting entry.....	100	-8	-82	-58	-198
Gross National Expenditure in Constant (1949) Dollars.....	24,397	25,242	25,805	26,468	28,111
Index of gross national expenditure (1949=100).....	149.3	154.4	157.9	162.0	172.0

5.—Personal Income, by Source, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125; for 1954 in the 1959 edition, p. 1090; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Wages, salaries and supplementary labour income.....	16,521	17,459	18,251	19,068	20,359
Deduct: Employer and employee contributions to social insurance and government pension funds.....	-615	-652	-745	-787	-816
Military pay and allowances.....	491	496	509	550	586
Net income received by farm operators from farm production.....	1,201	1,126	1,178	949	1,402
Net income of non-farm unincorporated business.....	2,125	2,210	2,213	2,289	2,380
Interest, dividends and net rental income of persons.....	2,277	2,599	2,836	2,985	3,186
Transfer Payments (excluding interest)—					
From governments.....	2,637	2,755	3,129	3,408	3,652
Charitable contributions from corporations.....	38	43	40	44	45
Totals, Personal Income.....	24,675	26,036	27,411	28,506	30,794

6.—Disposition of Personal Income, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125; for 1954 in the 1959 edition, p. 1092; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Personal Direct Taxes—					
Income taxes.....	1,554	1,744	1,978	2,131	2,311
Succession duties.....	126	130	158	144	166
Miscellaneous taxes.....	115	214	224	236	237
Purchases of goods and services.....	21,245	22,591	23,512	24,486	25,749
Personal net savings.....	1,635	1,357	1,539	1,509	2,331
Totals, Personal Income.....	24,675	26,036	27,411	28,506	30,794

7.—Personal Expenditure on Consumer Goods and Services, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126; for 1954 in the 1959 edition, p. 1092; for 1955 in the 1960 edition, p. 1118; and for 1956 and 1957 in the 1961 edition, p. 1093.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Foods.....					
Tobacco and alcoholic beverages.....	5,236	5,465	5,701	5,796	5,985
Clothing and personal furnishings.....	1,441	1,552	1,601	1,640	1,729
Shelter.....	2,179	2,267	2,355	2,409	2,501
Household operation.....	3,154	3,442	3,636	3,811	3,993
Transportation.....	2,701	2,873	2,918	3,031	3,187
Personal and medical care and death expenses.....	2,511	2,723	2,806	2,847	3,074
Miscellaneous.....	1,611	1,769	1,924	2,068	2,229
	2,412	2,500	2,571	2,884	3,051
Totals.....	21,245	22,591	23,512	24,486	25,749
Durable goods.....	2,499	2,678	2,669	2,697	2,913
Non-durable goods.....	10,878	11,373	11,785	12,257	12,877
Services.....	7,868	8,540	9,058	9,532	9,959

8.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126; for 1954 in the 1959 edition, pp. 1092 and 1094; for 1955 in the 1960 edition, p. 1119; and for 1956 and 1957 in the 1961 edition, p. 1094.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Revenue					
Direct Taxes: Persons—					
Income taxes.....	1,554	1,744	1,978	2,131	2,311
Succession duties.....	126	130	158	144	166
Miscellaneous taxes.....	115	214	224	236	237
Direct taxes: corporations.....	1,315	1,581	1,562	1,612	1,750
Withholding taxes.....	48	74	79	116	125
Indirect taxes.....	4,028	4,464	4,706	4,970	5,552
Investment Income—					
Interest.....	363	415	463	487	519
Profits of government business enterprises.....	574	583	590	643	692
Employer and employee contributions to social insurance and government pension funds.....	615	652	745	787	816
Totals, Revenue.....	8,738	9,857	10,505	11,126	12,168
Expenditure					
Purchase of goods and services.....	6,180	6,490	6,755	7,205	7,721
Transfer Payments—					
Interest.....	782	963	1,096	1,164	1,274
Other.....	2,637	2,755	3,129	3,408	3,652
Subsidies.....	146	205	236	254	291
Surplus or deficit (on transactions relating to the national accounts).....	—1,007	—556	—711	—905	—770
Totals, Expenditure.....	8,738	9,857	10,505	11,126	12,168

9.—Analysis of Corporation Profits, 1958-62

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127; for 1954 in the 1959 edition, p. 1094; for 1955 in the 1960 edition, p. 1119; and for 1956 and 1957 in the 1961 edition, p. 1094.

(Millions of dollars)

Item	1958	1959*	1960*	1961*	1962
Corporation profits before taxes.....	2,605	3,003	2,905	2,873	3,254
Dividends paid to non-residents.....	470	501	454	587	570
Corporation profits including dividends paid to non-residents	3,075	3,504	3,359	3,460	3,824
Deduct: Corporation income tax liabilities.....	-1,315	-1,581	-1,562	-1,612	-1,750
Excess of tax liabilities over collections.....	-24	166	-104	61	95
Tax collections.....	1,539	1,425	1,666	1,551	1,655
Corporation profits after taxes.....	1,760	1,923	1,797	1,848	2,074
Deduct: Dividends paid to non-residents.....	-470	-501	-454	-587	-570
Corporation profits retained in Canada.....	1,290	1,422	1,343	1,261	1,504
Deduct: Dividends paid to Canadian persons.....	-376	-393	-430	-439	-480
Deduct: Charitable contributions from corporations.....	-38	-43	-40	-44	-45
Undistributed Corporation Profits.....	876	986	873	778	979

10.—Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1958-62

NOTE.—Comparable figures for the years 1954 and 1955 are given in the 1957-58 Year Book, p. 1127; and for 1956 and 1957 in the 1959 edition, p. 1094.

(Millions of dollars)

Industry	1958	1959*	1960*	1961*	1962
Agriculture.....	9	11	3	16	16
Forestry.....					
Fishing and trapping.....	246	326	361	395	430
Mining, quarrying and oil wells.....	1,401	1,658	1,519	1,542	1,805
Manufacturing.....	173	113	79	95	97
Construction.....	96	134	133	129	127
Transportation.....	12	15	13	14	11
Storage.....	81	116	129	139	160
Communications.....	57	72	84	88	94
Electric power, gas and water utilities.....	241	272	240	227	220
Wholesale trade.....	241	256	219	217	274
Retail trade.....	445	446	497	523	505
Finance, insurance and real estate.....	73	85	82	75	85
Service.....					
Totals.....	3,075	3,504	3,359	3,460	3,824

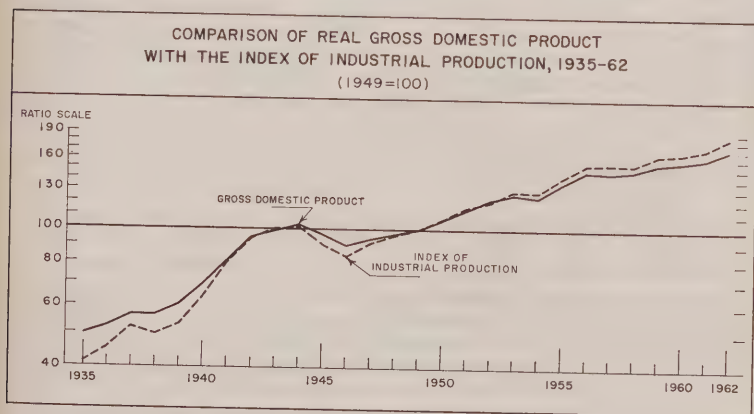
Section 2.—Industry Production Trends*

The Dominion Bureau of Statistics has made available a new set of historical production data pertaining to the entire spectrum of Canadian industries. These data, in the form of volume of production indexes, are measures of value added for each industry expressed in the dollars of a base year. Technically, they are termed "indexes of real gross domestic product (GDP) at factor cost originating by industry".†

* Replaces, for this issue only, the Survey of Production analysis.

† *Indexes of Real Domestic Product by Industry of Origin, 1935-61* (Catalogue No. 61-505). This paper provides a detailed explanation of concepts, uses and limitations, data sources, methodology, etc., as well as a much wider range of industries than provided in this Section.

In measuring the production of a single product such as steel, it is normal to think of so many tons of steel when the question of quantity arises. When measuring the combined production of steel and natural gas, there is an obvious need for a common denominator and, in such a case, it is appropriate to use the average unit prices of some time period (chosen as a base) to value the quantities produced before adding them together. The resultant quantity, volume, or real output measure can subsequently be left in its constant or base period dollar form or it can be expressed in index number form. The latter is accomplished by dividing the constant dollar aggregate of the current period by the dollar aggregate for the base period and multiplying by 100. In constructing a quantity index for a combination of industries where the output of one industry becomes the input of another, the portion double-counted must be eliminated. This is accomplished by re-valuing both intermediate inputs (materials, fuel, etc.) and total output in terms of the dollars of a common base year and subtracting the constant dollar value of the former from the latter to yield a constant dollar value added aggregate.* This aggregate is the quantity or volume measure represented by the indexes presented herein.

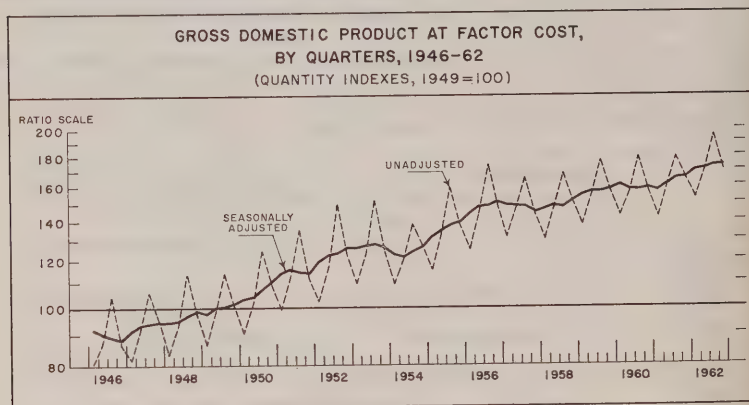


The value added or GDP volume indexes can be regarded as an extension of the index of industrial production† to encompass the remainder of the economy. Concepts and basic methodology used to construct the indexes are the same in both cases. Thus, industry production index coverage is extended from mining, manufacturing, and electric power and gas utilities, for which volume indexes have been published since the 1920's, to encompass all other major industrial divisions—agriculture, forestry, fishing and trapping, construction, retail and wholesale trade, finance, insurance and real estate, transportation, storage, communication, public administration and defence, and community, recreation, business and personal service; however, only the index of industrial production and its components are published currently and on a monthly basis. The GDP indexes can also be regarded as an extension of the national accounting framework, i.e., as an elaboration of the supply side of the national accounts.*

* *Indexes of Real Domestic Product by Industry of Origin, 1935-61* (Catalogue No. 61-505). This paper provides a detailed explanation of concepts, uses and limitations, data sources, methodology, etc., as well as a much wider range of industries than provided in this Section.

† See *Revised Index of Industrial Production, 1935-1957* (Catalogue No. 61-502) and the current monthly publication *Index of Industrial Production* (Catalogue No. 61-005).

The annual indexes are well suited for studies of production trends, growth rates and inter-industry comparisons, but the quarterly indexes provide a much better tool for the study of the cyclical behaviour of industries, short-term changes in production and, in fact, for most types of current analysis. Statistics computed for less than annual intervals, however, are frequently subject to strong seasonal influences and variations in the number of working days during a quarter may cause differences in the levels of output between two quarters which otherwise would not exist. Accordingly, the quarterly real output indexes have been adjusted for both seasonal and calendar variation. The effects of the seasonal adjustment are shown on the following chart.



Factors Underlying Industrial Output Trends, 1935-62.—Over the course of the past three decades, the world has undergone profound economic changes, the more dramatic and far-reaching of which were: the depression of the 1930's and the subsequent slow recovery; the unprecedented upheaval of the Second World War; the emergence of new national and international spheres of influence in the postwar era, both on the political and on the economic fronts; the ever-present social flux with its attendant changes in mode of living; and the striking advances in the fields of science and technology—two forces which are themselves among the greatest contributors to change. Canada has not escaped these influences. Insofar as it has an open economy, sensitive to changes in world economic climate and affected in many ways by the powerful and technologically advanced economy of the United States, Canada may be said to be particularly susceptible to them. It is against this background that Canadian economic development during the 1935-62 period should be reviewed.

During this period, Canada's real domestic product more than tripled, growing at an average annual compound rate of 4.4 p.c. This growth resulted from the combined pressures brought to bear upon the various goods-producing and service-producing industries by the inter-related changes in demand (both domestic and foreign), technology, capital formation, marketing techniques and the labour force. The domestic market expanded considerably during this period, especially in the 1950's when immigration and net family formation reached a postwar peak. The population of Canada increased from 10,845,000 in mid-1935, through 13,712,000 in 1950 to 18,570,000 in mid-1962, an average annual compound rate of increase of 2.2 p.c.

The tremendous expansion in productive activity following the outbreak of World War II, when output almost doubled within a period of five years, was facilitated by the existence of a large unused labour pool at the outset of hostilities. During the war years a large proportion of resources was diverted to the war effort, resulting in the expansion of many defence-oriented industries. At the same time, shortages of consumer goods and investment goods were created in other areas while income and savings were rising. During the immediate postwar period a certain amount of industrial dislocation occurred as a result of re-tooling and a large-scale changeover to peacetime production, coupled with major labour unrest in some industries. This phase of readjustment, however, did not generally extend beyond 1946, following which production resumed its upward trend.

The postwar period was marked by three major expansions. The first was based on satisfying the backlog of war-deferred investment and consumer demand and on supplying the needs of the war-devastated countries, especially for various materials. The second was based on the requirements of defence-supporting industries following the outbreak of the Korean hostilities, and on stock-piling requirements at home and abroad. The third was the investment boom of the mid-1950's during which output reached a new high level. These strong demand influences combined to make most of the period one of fairly rapid and sustained growth. Production data reveal, however, a diminishing rate of increase during the late 1950's, as external sources of supply for many commodities multiplied and as the competition encountered by many Canadian producers intensified. At the same time, there was an absence of strong stimulants to domestic demand, such as the deferred demand and the population growth of the preceding periods. During the early 1960's, however, the first waves of the postwar generation were beginning to swell the labour force and to exercise their influence on the demand for goods and services.

Along with the increases in total final demand there were also shifts in the composition of demand, which affected the output of the various industries. Imports retained roughly the same relative share of the gross national product, while the share of exports declined from 26.4 p.c. in 1935 to 20.4 p.c. in 1962, an indication of the growing importance of the domestic market as an outlet for the products of Canadian industry. Government expenditure and business gross fixed capital formation made considerable relative gains but personal expenditure on goods and services, as a percentage of total expenditure, declined from 77.4 p.c. in 1935 to 63.7 p.c. in 1962.

Even more remarkable than some of the demand-induced changes were the striking changes brought about by the technological discoveries and innovations that have transformed whole production processes and opened up hitherto unknown areas in the fields of manufacturing, transportation and communication. Newer industries, such as air transport, have assumed major importance in a comparatively short time; entirely new industries, such as gas pipelines, have appeared; and a profusion of new products have been created, such as the petrochemicals of the chemicals industry and the television and other electronics products of the telecommunication equipment industry. As was to be expected, the industries in a position to benefit from such innovations were among the most rapidly expanding in the economy, although the impact of the expansion spread through the entire economic system. The changes in production and demand also influenced the level of employment in the various industries; there was a considerable shift in employment during the postwar period from the goods-producing to the service-producing industries and most of the loss in the former took place in agriculture. From 1946 to 1962, agriculture decreased its share of total employment by 15 p.c., while total employment continued to expand. In the same period the service-producing industries increased their share from 39 p.c. to just over 53 p.c. of the total.

11.—Quantity Indexes of Gross Domestic Product at Factor Cost, by Industry of Origin, 1935-62

(1949=100)

Industry	1935	1936	1937	1938	1939	1940	1941	1942	1943
Goods-producing industries.....	49.2	51.9	58.1	58.0	63.3	72.5	83.7	102.1	99.0
Agriculture.....	95.0	85.0	85.5	109.5	126.8	127.8	106.6	164.2	102.4
Forestry.....	59.2	66.8	87.1	56.8	71.1	83.7	82.9	81.5	84.1
Fishing and trapping.....	72.4	76.0	73.9	75.5	78.4	79.8	83.9	80.0	80.9
Mining ¹	60.8	68.3	79.4	83.7	90.3	96.2	101.0	99.1	88.8
Manufacturing ²	39.0	43.0	49.2	45.3	48.7	60.4	78.7	96.1	104.0
Construction.....	33.5	37.5	44.7	42.2	43.4	49.1	63.6	67.9	65.6
Electric power and gas utilities..	39.1	42.1	46.1	46.3	49.7	55.9	64.2	72.2	77.2
Service-producing industries.....	50.2	52.9	55.5	55.2	57.3	66.2	77.9	88.5	99.2
Transportation, storage, com- munication.....	43.2	46.8	49.7	48.7	51.6	63.4	77.8	87.7	98.0
Trade.....	45.1	48.5	52.3	50.9	53.4	58.4	65.1	67.2	68.8
Finance, insurance and real estate	58.4	60.7	60.4	59.8	60.4	61.3	64.3	67.4	69.7
Public administration and defence.....	47.9	49.0	51.6	56.3	61.6	104.8	159.6	235.3	311.2
Community, recreation, business and personal service.....	55.7	57.9	61.4	61.8	62.5	66.2	70.9	71.9	74.4
Gross Domestic Product....	49.7	52.4	56.7	56.5	60.2	69.2	80.6	95.0	99.0
	1944	1945	1946	1947	1948	1949	1950	1951	1952
Goods-producing industries.....	101.4	89.5	88.2	93.4	98.3	100.0	107.4	117.7	127.0
Agriculture.....	126.2	94.8	109.4	102.8	106.1	100.0	106.2	120.9	148.8
Forestry.....	87.1	93.5	103.1	118.7	118.8	100.0	118.9	141.5	129.7
Fishing and trapping.....	78.5	87.6	87.1	81.0	87.6	100.0	108.9	111.5	101.6
Mining ¹	79.7	77.2	74.3	78.5	90.0	100.0	109.5	123.4	131.0
Manufacturing ²	106.1	92.9	85.2	93.2	97.3	100.0	106.2	115.0	118.5
Construction.....	53.5	54.9	68.4	79.7	89.2	100.0	106.7	110.6	123.2
Electric power and gas utilities..	78.2	75.7	79.4	89.8	94.8	100.0	113.2	129.4	140.7
Service-producing industries.....	104.7	104.3	91.6	94.2	95.8	100.0	105.2	111.1	117.8
Transportation, storage, com- munication.....	100.1	98.7	90.5	98.2	99.8	100.0	103.3	113.1	119.4
Trade.....	72.8	77.4	89.4	97.3	98.0	100.0	106.9	108.1	114.6
Finance, insurance and real estate	72.1	75.5	81.6	87.7	93.4	100.0	105.6	113.4	118.4
Public administration and defence.....	342.1	309.3	124.7	92.6	92.3	100.0	106.6	119.0	136.3
Community, recreation, business and personal service.....	77.1	81.5	89.3	92.9	95.9	100.0	103.3	107.9	112.1
Gross Domestic Product....	103.0	97.0	89.8	93.8	97.1	100.0	106.4	114.6	123.7
	1953	1954	1955	1956	1957	1958	1959	1960	1961
Goods-producing industries.....	130.3	123.5	139.2	152.5	148.3	149.1	155.9	156.7	157.9
Agriculture.....	136.3	104.3	132.1	141.7	117.5	125.1	125.2	128.0	116.0
Forestry.....	123.7	128.4	135.7	143.4	130.5	115.6	130.6	141.8	130.8
Fishing and trapping.....	103.6	112.3	105.6	111.6	105.5	117.8	105.9	104.1	115.7
Mining ¹	142.1	158.7	185.2	212.3	227.8	227.0	251.1	253.3	266.9
Manufacturing ²	126.4	122.9	134.7	145.1	142.9	140.7	149.8	149.3	153.0
Construction.....	130.1	129.8	139.8	165.7	174.7	173.4	170.7	163.0	168.4
Electric power and gas utilities..	147.9	161.4	183.3	204.9	220.3	239.1	268.7	298.0	317.7
Service-producing industries.....	122.7	124.3	132.9	142.3	145.6	148.7	157.1	160.5	165.3
Transportation, storage, com- munication.....	120.9	117.9	133.6	149.2	149.5	146.6	160.6	163.9	172.1
Trade.....	121.3	120.6	132.0	144.2	144.6	147.4	156.4	156.6	158.2
Finance, insurance and real estate	123.2	129.9	136.5	141.5	150.9	156.1	163.5	169.5	175.5
Public administration and defence.....	144.2	151.3	156.3	158.9	163.7	171.3	175.0	177.8	183.9
Community, recreation, business and personal service.....	115.7	117.3	119.9	127.0	130.6	135.2	141.4	147.4	152.2
Gross Domestic Product....	126.7	123.9	136.3	147.7	147.0	148.9	156.5	158.5	161.4
	1962								
Goods-producing industries.....	170.6								
Agriculture.....	134.7								
Forestry.....	140.5								
Fishing and trapping.....	130.4								
Mining ¹	287.4								
Manufacturing ²	164.9								
Construction.....	171.0								
Electric power and gas utilities..	337.7								
Service-producing industries.....	172.4								
Transportation, storage, com- munication.....	179.2								
Trade.....	168.8								
Finance, insurance and real estate	182.9								
Public administration and defence.....	187.9								
Community, recreation, business and personal service.....	158.2								
Gross Domestic Product....	171.4								

¹ Contract drilling (excluding drilling for oil and gas) is not included here but is included in the totals "Goods-producing industries" and "Gross Domestic Product".
² Repair service establishments classified to manufacturing are not included here but are included in the totals "Goods-producing industries" and "Gross Domestic Product".

Industrial Expansion, 1935-62.—An examination of industrial expansion since 1935 reveals certain well-defined patterns of development. Individual industries have flourished or, in rare instances such as coal mining, have declined but the major industry groups have all expanded. Development, however, has not been uniform throughout the period. Three major types of factors affecting the expansionary path of industry have been in evidence in the Canadian economy at some point during the period.

The first may be described as some special factor at work in a particular industry, the effects of which would be most noticeable in that industry—for example, the demand for uranium which played such an important role in the mining industry during the latter half of the 1950's, the opening up of new mineral resources such as the iron ore mines in Quebec-Labrador, and certain technological innovations such as the development of synthetic textiles or television.

The second type of factor is much more general in its effects and in its causes. Such factors as increased demand for consumer goods resulting from a rising standard of living and a growing population, shifts in world trading patterns or shortages causing increased demand for export goods; the surge of investment activity associated with replacement cycles, attempts to broaden the base of economic activity through investment in research, social overhead capital, education, improved management and marketing techniques, or a more efficient production process (or a confluence of all these factors) appear to lie at the root of such postwar expansions as the investment boom of the mid-1950's or the rapid expansion in production immediately following the Second World War.

The third type of factor would be some unique and far-reaching event, of which the Second World War and the Korean War might serve as conspicuous examples. Each afforded a powerful stimulus to growth in a large cross-section of industries.

All three factors, jointly or in turn, have reacted on the various industries resulting in the upswings in aggregate production. The effect of these factors on the individual industries is revealed to some extent by their relative rates of growth.

12.—Growth Rates of the Main Industrial Groups, 1935-62 and 1946-62

Industry	1935-62	1946-62	Industry	1935-62	1946-62
	p.c.	p.c.		p.c.	p.c.
Goods-producing industries.....	4.4	4.1	Service-producing industries.....	4.5	4.3
Agriculture.....	0.9	1.3	Transportation, storage and communication.....	5.0	4.4
Forestry.....	3.1	1.4	Trade.....	5.2	4.1
Fishing and trapping.....	2.2	1.8	Finance, insurance and real estate.....	4.9	5.1
Mining.....	7.3	9.3	Public administration and defence	3.4	4.5
Manufacturing.....	5.0	3.9	Community, recreation, business and personal service.....	4.0	3.6
Construction.....	6.7	5.8			
Electric power and gas utilities.....	8.3	9.7	Gross Domestic Product.....	4.4	4.2

Foremost in growth was the electric power and gas utilities industry which showed an average annual compound rate of growth of close to 10 p.c. during the postwar period, while its longer-term growth rate was 8.3 p.c.; large-scale hydro-electric power developments along with the expansion of natural gas distribution helped to sustain this remarkable performance. The mining and construction industries ranked second and third, respectively. All three industries have been strongly affected by technological advances, new discoveries and a fairly well sustained demand for their products. In the case of mining, this demand frequently came from abroad, resulting in relatively high export sales and

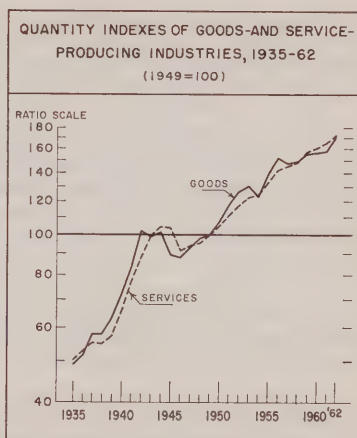
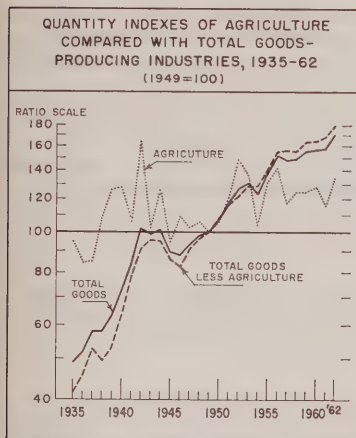
providing incentive for the opening up and developing of new mineral resource areas. Some slackening in construction activity was evident following the unusually high levels reached during the mid-1950's but demand for housing proved to be a sustaining influence during most of the period.

The industry divisions consisting of manufacturing, transportation, storage and communication, trade, and finance, insurance and real estate all expanded at roughly the same average rate during the 1935-62 period—close to 5 p.c. The rates of growth of these industries for the postwar period diverged slightly but still fell within the range of 4 to 5 p.c. During the latter period, public administration and defence also had a growth rate within this range. Although these industries expanded at about the same rates, the manufacturing, trade, and transportation, storage and communication industry divisions, which together account for about one half of total output, also showed strikingly similar cyclical patterns. In fact, these are the three industry divisions within the Canadian economy that showed the most pronounced and consistent patterns of cyclical swings during the postwar period.

The Second World War and, to some extent, the Korean War provided strong impetus to the output of the manufacturing industries and to transportation. Within manufacturing, it was the durable manufactures component which expanded considerably during both periods of hostilities and which benefited from the need for machinery and equipment during the investment boom and from consumer demand during the early part of the postwar expansion. Non-durables maintained a fairly steady rate of expansion for most of the period, largely in response to increased population and demand for industrial materials. Trade was less strongly affected by defence requirements. Retail trade, in particular exhibited a relatively smooth expansionary path.

The community, recreation, business and personal service industry division was relatively insensitive both to cyclical and irregular influences but, along with some other steadily expanding industries such as finance, insurance and real estate, and non-durables, it helped to sustain aggregate production and growth during periods of contraction and expansion. Within the division, business services showed very rapid advances, reflecting increased use of advertising, accounting and legal services. Among the community services group, education and hospitals showed very pronounced gains but recreation services did not participate in the general upsurge during the 1950's. Within the personal services group, one of the more interesting developments was the decline in the domestic service component, while other industries such as restaurants, hotels and motels made considerable gains. Thus, while this division as a whole showed a less-than-average rate of growth, some of its components were among the most rapidly and steadily expanding in the economy.

The rates of growth in the forestry, agriculture, and fishing and trapping divisions were also below average and were subject to pronounced irregular fluctuations in output. Forestry experienced sharp year-to-year fluctuations because of the nature of its production process and also, to some extent, because of its sensitivity to changes in world demand and price. The volume of agricultural production varies, of course, with the crop produced and its output depends to a far greater extent on weather conditions and similar factors than to changes in prices and demand. It is interesting to note, however, that particularly poor crop years have coincided with the cyclical declines in the gross domestic product during the postwar period. Generally speaking, there has been a lack of buoyant expansion in agricultural production but, although the rate of growth was low, the year-to-year changes were sometimes quite spectacular. In absolute terms, the industry production levels have continued to rise over the longer term, and this increase has been accomplished with a declining labour force.



Section 3.—Canadian Balance of International Payments*

Developments connected with the Canadian balance of international payments have drawn a good deal of public attention in recent years. For a long period wide degrees of imbalance in Canada's international accounts have been characteristic. Each year since 1950 Canada's current expenditures abroad have exceeded current external income with the exception of 1952. These large current deficits, which have ranged as high as \$1,504,000,000 in 1959, have been financed by massive inflows of capital. Although the deficits since then have been reduced, the current imbalance even by 1961 was still \$982,000,000. In 1962 the deficit for the year was reduced to \$848,000,000 due to improvements in the second half of the year, and the trend toward improvement continued in 1963.

Developments within 1962 were diverse and, as a result, the accounts for the year as a whole reflect two contrasting periods. In the first half of the year there was a rapid loss of foreign exchange holdings which led to the exchange crisis in June and to the series of official measures introduced in the second quarter with the object of stabilizing the international exchange value of the Canadian dollar and Canada's international transactions. In the first half of the year there had been net outflows of capital and a growing current account deficit. In the second half of the year there was a rapid restoration in official holdings of exchange accompanying large capital inflows and a contraction in the size of the current account deficit.

The official measures introduced in the second quarter of 1962 included the stabilization of the foreign exchange value of the Canadian dollar announced by the Minister of Finance on May 2, and the comprehensive program announced by the Prime Minister late in June 1962. This program included temporary graduated surcharges ranging between 5 p.c. and 15 p.c. on approximately half of all Canadian imports, a reduction in the amount of goods that Canadians travelling abroad were permitted to bring duty-free into Canada, reductions in government expenditures and the fixing of the bank rate at 6 p.c. To reinforce the reserves, Canada arranged for international financial support for well over

* More detailed information is given in DBS annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201) and in *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001).

\$1,000,000,000 in cash and stand-by credits from the International Monetary Fund, the Federal Reserve System of the United States, the Bank of England, and the Export-Import Bank of Washington. After drawing \$650,000,000 of these resources, Canada's official holdings of gold and foreign exchange at the mid-year were \$1,809,000,000.

In the third quarter there were large increases in the official reserves of foreign exchange and other evidences of the restoration of confidence in Canada's ability to defend the exchange rate. A return of short-term capital from abroad contributed initially to the recovery of the reserves and the resumption of long-term capital inflows helped to consolidate the restoration. Accordingly, the above-mentioned international short-term credits were progressively retired so that at the end of 1962 only the drawing of \$300,000,000 from the International Monetary Fund remained outstanding. It was also possible to withdraw some of the surcharges on imports before the end of 1962 and these were all removed by the end of the first quarter of 1963.

From their low point in June 1962, the official holdings of gold and United States dollars increased rapidly to \$1,159,000,000 at the end of the month, \$1,795,000,000 by the end of the third quarter and \$2,239,000,000 by the end of the year, expressed in United States funds and exclusive of the international financial assistance.

Current Account Transactions.—The surplus on merchandise trade,* which emerged in 1961 for the first time since 1954, was maintained in 1962, although at a slightly lower level of \$155,000,000. However, a better than 10-p.c. reduction in net payments on non-merchandise transactions from \$1,155,000,000 to \$1,003,000,000 caused the current account deficit to decline from \$982,000,000 to \$848,000,000 in 1962. The balance on merchandise trade has varied widely, with the peak deficit of \$728,000,000 occurring in 1956, when it accounted for more than one half of the total deficit. On the other hand, the non-merchandise deficit has risen steadily since 1952, except for the decline in 1962.

Since 1954, when merchandise exports and imports were almost equal at \$3,900,000,000, exports have increased fairly steadily to a peak of \$6,364,000,000 in 1962, a 60-p.c. advance. Imports on the other hand have shown wider fluctuations in their growth pattern. The value of imports in current dollars rose more than 40 p.c. in two years to \$5,565,000,000 in 1956 and remained at about that level until 1961, except for a sharp drop of nearly 8 p.c. to \$5,066,000,000 in 1958. In 1962 imports rose more than 8 p.c. over 1961 to a record level of \$6,209,000,000.

In the past decade or so, the relative importance of exports of metals and minerals increased markedly, the relative importance of other materials for industry, such as chemicals and fertilizers, advanced more moderately, and the percentage shares for farm and forest products narrowed visibly. The relative position of wheat and wheat flour, which had been diminishing, recovered sharply in 1961, owing to large shipments of grain to mainland China and other communist countries. Notwithstanding a decline of some 6 p.c. in 1962, exports of wheat and wheat flour in the two most recent years were nearly as high as in 1952 and 1953, which were the years of peak shipments in the past decade. In addition to newer products for export, such as iron ore, uranium, petroleum and natural gas, there were general increases in more traditional staples such as lumber, pulp and paper, nickel, aluminum and copper, with the metal items showing above-average gains. About 80 p.c. of the rise of \$475,000,000 in exports in 1962 originated from larger shipments of farm and fish products other than grain, forestry products excluding newsprint, iron ore, crude petroleum and natural gas, and aircraft and parts. After the substantial gain in 1961, exports of grain and flour declined some 7 p.c. in 1962, with the reductions largely concentrated in shipments to countries in Eastern Europe. For the third successive year, exports of uranium dropped in 1962 to a level slightly more than half that of the peak year

* Commodity trade statistics have been adjusted to reflect more closely the timing of transactions, particularly for investment goods, and to exclude commodities which are either covered elsewhere in the accounts or are not pertinent for balance of payments purposes.

1959. The rise of nearly \$500,000,000 in imports in 1962 was distributed widely over industrial materials, investment goods and consumer commodities. Each of the latter two groups accounted for just under one third of total imports in 1962, while industrial materials together with fuels and lubricants accounted for the remainder (see also Part I of Chapter XX on Foreign Trade).

The deficit on non-merchandise transactions of \$1,003,000,000, down 13 p.c. from the high level of \$1,155,000,000 of the preceding year, was over eight times as great as that of 1949 and double that of as recent a year as 1955. This expansion was attributable largely to the continuing rapid growth in Canada's indebtedness to foreign countries and to the rising population with higher per capita incomes. A total of \$570,000,000, or over one half of the 1962 deficit on "invisibles", was directly related to Canada's indebtedness abroad, with total interest and dividend payments by Canadians to non-resident investors reaching \$781,000,000. In addition, transfers in other forms of investment income amounted to well over \$100,000,000, and there were also substantial payments for a variety of business services by Canadian subsidiaries to their home offices and to other non-residents. Furthermore, some hundreds of millions of dollars worth of earnings, which accrued to foreigners but were retained in Canada for re-investment, are excluded from the current account.

From a peak of \$207,000,000 in 1959 and 1960, net travel payments were reduced to \$160,000,000 in 1961, and were further cut down to \$50,000,000 in 1962, which was about the level of the deficit on travel account in the early 1950's. In both 1961 and 1962, the improvement occurred wholly in transactions with the United States. Receipts from American visitors were up more than 15 p.c. each year, while expenditures by Canadians visiting the United States declined, particularly in the latter year. The stabilization of the Canadian dollar at a lowered value in terms of foreign currency and the additional restriction in the second quarter of 1962 to the privilege of duty-free purchases by Canadians abroad were important factors behind the narrowing of the deficit. To these net payments were added deficits of \$90,000,000 on freight and shipping services, \$39,000,000 on inheritances and transfers by migrants and \$119,000,000 covering government transactions, personal remittances, business services and miscellaneous income. Included in government expenditures were official contributions amounting to \$32,000,000, which compared with \$56,000,000 in the previous year. Against the expenditures in 1962 was an amount of \$155,000,000, representing gold production available for export.

The characteristic bilateral distribution of the Canadian balance of payments was maintained in 1962; a surplus from transactions with overseas countries partially covered a deficit—four times as large in absolute terms—with the United States. However, a larger decline in this deficit from \$1,386,000,000 to \$1,116,000,000 than in the surplus with overseas countries from \$401,000,000 to \$268,000,000 contributed to reducing the over-all deficit from \$982,000,000 to \$848,000,000. In current dollars, the 1962 deficit with the United States approximated the level in 1958 and was much higher than in any year before 1956. The surplus on current transactions with Britain continued to grow in 1962—from \$26,000,000 to \$213,000,000—while the substantial surplus of 1961 with other overseas countries was reduced by three quarters to \$55,000,000.

Capital Movements.—In 1962, Canada continued to draw substantially on the resources, both real and financial, of the other countries of the world. The outline of Canada's balance of international payments for the year, as traced out in capital movements and in the current account deficit, was broadly similar to that for 1961. But encompassed within the 1962 total were the exchange crisis of early summer, the effects of remedial measures and other developments through the course of the year. Capital movements in long-term forms, including direct investment, portfolio stocks and bonds, official loans and other long-term investments, totalled \$693,000,000 in 1962, as compared with

\$790,000,000 in the previous year. Long-term capital financed 82 p.c. and 80 p.c., respectively, of the current account deficits in 1962 and 1961. The proportions were smaller in 1955, 1959 and 1960, but averaged about 94 p.c. for the postwar period as a whole.

The net inflow of capital to Canada for direct investment in foreign-controlled enterprises during 1962 was estimated at \$525,000,000, some \$10,000,000 higher than in 1961, and was exceeded only in three earlier postwar years—1956, 1959 and 1960. An unusually large proportion, perhaps as much as a third of the movement in 1962, was related to the acquisition of existing enterprises and interests and for refinancing. Approximately 60 p.c. of the direct investment inflow in 1962 originated in the United States and the remainder was about evenly divided between Britain and other overseas countries. Direct investment abroad of Canadian capital was estimated at \$100,000,000, up \$20,000,000 over the total for 1961.

Owing to the mid-year exchange crisis and to the re-entry in the final quarter of the Government of Canada as a borrower in the United States capital market for the first time since 1950, transactions in stocks and bonds between Canada and other countries were of more than usual interest in 1962. Net inflows from transactions in Canadian and foreign securities amounted to \$257,000,000, as compared with \$306,000,000 in 1961 and with an average of nearly \$680,000,000 for the four years 1956 to 1959. While retirements of Canadian securities worth \$322,000,000 in 1962 were only moderately above the levels of recent years, new issues increased by a third to \$710,000,000, reaching a total exceeded only in 1957. At the same time, trade in outstanding Canadian securities led to a moderate net capital outflow, the first since 1955, as did also transactions in foreign securities. The over-all movement to Canada of portfolio security capital in 1962 came entirely from the United States with net inflows from that country of \$430,000,000, as there were outflows of \$90,000,000 to Britain and \$83,000,000 to other countries. Repayments totalling \$129,000,000 on loans made by the Government of Canada were received during 1962 from a number of European and Asian countries and included large prepayments from France and the Netherlands; and Canada subscribed \$7,000,000 for bonds of the United Nations.

The export of capital represented by the growth of Canada's official gold and foreign exchange holdings over the course of the year totalled \$537,000,000, or \$207,000,000 apart from the special international financial assistance received in connection with the exchange crisis in the second quarter of the year. In all, this aid amounted to \$707,000,000, representing a drawing from the International Monetary Fund of various foreign currencies equivalent to \$300,000,000 in United States funds, and of reciprocal currency arrangements with the central banks of the United States and Britain, under which amounts of \$250,000,000 and \$100,000,000, respectively, in terms of United States funds were made available to Canada. However, with the rapid restoration of confidence and of the official holdings of gold and foreign exchange, the latter arrangement was terminated in the final quarter and a Canadian dollar equivalent of \$377,000,000 was returned to the two countries, leaving a net balance of \$330,000,000 for international financial assistance. From a variety of factors including changes in accounts receivable and payable and due also to a repayment of bank loans financed from the sale abroad of a new corporate bond issue, inflows of "other capital movements" declined substantially from \$467,000,000 in 1961 to \$280,000,000. A more detailed description of the exchange crisis and of the corrective measures adopted and their effects are found in the relevant issues of the *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001).

Since the shift upward at the beginning of the 1950's, direct investment inflows have been a specially significant element in the capital account. Continuing and substantial, these receipts contributed in particular to resource development and the growth of associated industries. By far the largest part of the new capital went into the petroleum and natural gas industry, a dynamic element in the expansion of the Canadian economy in this period. Large amounts were also invested in other mining industries, particularly for the development of iron ore, and in various branches of manufacturing.

From 1956 to 1959, the inflow for direct investment, substantial though it was, was less than the inflow of portfolio capital, as some of the sharply increased demands for new capital were channelled to foreign capital markets through the sale to non-residents of new issues of Canadian bonds and debentures. Corporations, provincial governments and municipalities were all important borrowers in this period. Statistics and comments on the effects of the unprecedented capital inflows upon the ownership of investments in Canada will be found in Section 4 on Canada's International Investment Position.

13.—Current Account Transactions between Canada and All Countries, 1943-62

(Millions of dollars)

Year	Current Receipts ¹	Current Payments ²	Net Balance including Mutual Aid Exports	Wartime Grants and Mutual Aid	Net Balance on Current Account indicating Net Movement of Capital
1943.....	4,064	2,858	+1,206	-518	+688
1944.....	4,557	3,539	+1,018	-960	+58
1945.....	4,456	2,910	+1,546	-858	+688
1946.....	3,365	2,905	+460	-97	+363
1947.....	3,748	3,699	+49	—	+49
1948.....	4,147	3,696	+451	—	+451
1949.....	4,089	3,912	+177	—	+177
1950.....	4,297	4,574	-277	-57	-334
1951.....	5,311	5,683	-372	-145	-517
1952.....	5,858	5,494	+364	-200	+164
1953.....	5,737	5,934	-197	-246	-443
1954.....	5,520	5,668	-148	-284	-432
1955.....	6,072	6,548	-476	-222	-698
1956.....	6,621	7,830	-1,209	-157	-1,366
1957.....	6,622	7,970	-1,348	-107	-1,455
1958.....	6,579	7,568	-989	-142	-1,131
1959.....	6,855	8,296	-1,441	-63	-1,504
1960.....	7,153	8,353	-1,200	-43	-1,243
1961.....	7,769	8,716	-947	-35	-982
1962 ^p	8,389	9,196	-807	-41	-848

¹ Includes Mutual Aid exports.

² Excludes Mutual Aid offsets.

14.—Geographical Distribution of the Balance on Current Account between Canada and Other Countries, 1943-62

NOTE.—In the years 1943-46 balances include exports of currently produced goods provided as Mutual Aid or Official Contributions. (See also Table 1.)

(Millions of dollars)

Year	United States ¹	Britain	Other Overseas Countries	All Countries	Year	United States ¹	Britain	Other Overseas Countries	All Countries
1943.....	-19	+1,149	+76	+1,206	1953.....	-904	+133	+328	-443
1944.....	+31	+746	+241	+1,018	1954.....	-807	+229	+146	-432
1945.....	+36	+747	+763	+1,546	1955.....	-1,035	+330	+7	-698
1946.....	-607	+590	+597	+460	1956.....	-1,639	+252	+21	-1,366
1947.....	-1,134	+633	+550	+49	1957.....	-1,579	+118	+6	-1,455
1948.....	-393	+486	+358	+451	1958.....	-1,176	+104	-59	-1,131
1949.....	-601	+446	+332	+177	1959.....	-1,230	+13	-287	-1,504
1950.....	-400	+24	+42	-334	1960.....	-1,361	+166	-48	-1,243
1951.....	-951	+223	+211	-517	1961.....	-1,386	+187	+217	-982
1952.....	-849	+388	+625	+164	1962 ^p	-1,116	+213	+55	-848

¹ Includes all net exports of non-monetary gold.

15.—Balance of International Payments between Canada and All Countries, 1956-62

(Millions of dollars)

Item	1956	1957	1958	1959 ¹	1960 ¹	1961 ¹	1962
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	4,837	4,894	4,887	5,150	5,392	5,889	6,364
Mutual Aid to NATO countries.....	157	107	142	63	43	35	41
Gold production available for export.....	150	147	160	148	162	162	165
Travel expenditures.....	337	363	349	391	420	482	560
Interest and dividends.....	142	154	168	182	173	209	211
Freight and shipping.....	457	445	401	420	442	486	498
All other current credits.....	541	512	472	501	521	506	550
TOTALS, CURRENT RECEIPTS.....	6,621	6,622	6,579	6,855	7,153	7,769	8,389
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	5,565	5,488	5,066	5,572	5,540	5,716	6,209
Travel expenditures.....	498	525	542	598	627	642	610
Interest and dividends.....	523	589	612	671	653	770	781
Freight and shipping.....	502	515	460	525	533	568	588
Official contributions ¹	187	147	195	135	104	91	73
All other current debits.....	712	813	835	838	939	964	976
TOTALS, CURRENT PAYMENTS.....	7,987	8,077	7,710	8,359	8,396	8,751	9,237
Balance on merchandise trade.....	-728	-594	-179	-422	-148	+173	+155
Balance on other transactions.....	-638	-861	-952	-1,082	-1,095	-1,155	-1,003
C. CURRENT ACCOUNT BALANCE.....	-1,366	-1,455	-1,131	-1,504	-1,243	-982	-848
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada.....	+583	+514	+420	+550	+650	+515	+525
Direct investment abroad.....	-104	-68	-48	-80	-50	-80	-100
Canadian Securities—							
Trade in outstanding issues.....	+199	+92	+88	+201	+54	+103	-52
New issues.....	+667	+798	+677	+707	+447	+533	+710
Retirements.....	-141	-133	-158	-258	-265	-297	-322
Foreign security transactions.....	+2	+6	+3	-33	-19	-33	-79
Repayments on Government of Canada loans.....	+69	+50	+30	+33	+32	+37	+122
Subscriptions in gold and U.S. dollars to international financial agencies.....	-4	—	—	-59	-3	—	-1
Change in Canadian dollar holdings of foreigners.....	-24	-35	+106	+13	+120	-34	-28
Change in official holdings of gold and foreign exchange (increase, minus).....	-33	+105	-109	+70	+39	-229	-537
Other capital movements ²	+152	+126	+122	+360	+238	+467	+610
E. NET CAPITAL MOVEMENT.....	+1,366	+1,455	+1,131	+1,504	+1,243	+982	+848

¹ Includes Mutual Aid to NATO countries.² Includes unrecorded capital movements, errors and omissions, and special international financial assistance of \$330,000,000 in 1962.

16. —Current and Capital Account Transactions between Canada and the United States, 1956-62

(Millions of dollars)

Item	1956	1957	1958	1959	1960	1961 ¹	1962
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	2,854	2,931	2,908	3,191	3,040	3,213	3,742
Gold production available for export.....	150	147	160	148	162	162	165
Travel expenditures.....	309	325	309	351	375	435	510
Interest and dividends.....	80	95	100	99	102	109	124
Freight and shipping.....	223	222	206	228	220	230	260
All other current receipts.....	399	350	327	363	380	361	382
TOTALS, CURRENT RECEIPTS.....	4,015	4,070	4,010	4,380	4,279	4,510	5,183

16.—Current and Capital Account Transactions between Canada and the United States, 1956-62—concluded

Item	1956	1957	1958	1959	1960	1961	1962
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	4,021	3,878	3,443	3,727	3,713	3,828	4,217
Travel expenditures.....	391	403	413	448	462	459	420
Interest and dividends.....	427	480	500	547	531	642	655
Freight and shipping.....	351	351	294	326	324	333	350
All other current payments.....	464	537	536	562	610	634	657
TOTALS, CURRENT PAYMENTS.....	5,654	5,649	5,186	5,610	5,640	5,896	6,299
C. CURRENT ACCOUNT BALANCE.....	-1,639	-1,579	-1,176	-1,230	-1,361	-1,386	-1,116
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada.....	+406	+390	+303	+424	+446	+335	..
Direct investment abroad.....	-70	-35	-3	-7	-19	-26	..
Canadian Securities—							
Trade in outstanding issues.....	+34	-65	+60	+94	+47	+196	..
New issues.....	+601	+722	+600	+622	+381	+473	..
Retirements.....	-133	-105	-132	-211	-214	-215	..
Foreign security transactions.....	-3	+9	+2	-36	+4	-7	..
Subscriptions in gold and U.S. dollars to international financial agencies.....	—	—	—	-59	-3	—	..
Change in Canadian dollar holdings of foreigners.....	-48	-10	+83	+8	+60	-23	..
Change in official holdings of gold and foreign exchange (increase, minus).....	-34	+104	-108	+67	+39	-227	..
Other capital movements ¹	+103	+58	+147	+447	+285	+633	..
E. NET CAPITAL MOVEMENT.....	+856	+1,068	+952	+1,349	+1,026	+1,139	..
F. BALANCE SETTLED BY EXCHANGE TRANSFERS...	+783	+511	+224	-119	+335	+247	..
TOTALS, FINANCING OF CURRENT ACCOUNT BALANCE.....	+1,639	+1,579	+1,176	+1,230	+1,361	+1,386	..

¹ Includes unrecorded capital movements, and errors and omissions.

17.—Current Account Transactions between Canada and Britain, 1956-62

(Millions of dollars)

Item	1956	1957	1958	1959	1960	1961 ^r	1962
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	818	734	766	781	924	924	924
Travel expenditures.....	14	18	18	18	20	21	22
Interest and dividends.....	14	10	32	35	32	34	35
Freight and shipping.....	98	95	84	80	93	100	92
All other current receipts.....	71	81	60	69	76	74	78
TOTALS, CURRENT RECEIPTS.....	1,015	938	960	983	1,145	1,153	1,151
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	493	520	537	618	611	593	575
Travel expenditures.....	46	47	52	62	70	71	72
Interest and dividends.....	73	78	76	90	83	86	82
Freight and shipping.....	59	69	70	85	89	93	89
All other current payments.....	92	106	121	115	126	123	120
TOTALS, CURRENT PAYMENTS.....	763	820	856	970	979	966	938
C. CURRENT ACCOUNT BALANCE.....	+252	+118	+104	+13	+166	+187	+213

Section 4.—Canada's International Investment Position*

Canada's balance of payments is influenced to a considerable extent by the size and character of its balance of international indebtedness, a phrase used in the broad sense generally accepted in balance of payments terminology to include equity investments as well as contractual borrowings. This is true not only through the servicing of capital involving interest, dividends and miscellaneous income payments, but also through the influences of foreign investment on the Canadian economy and on the shape and direction of its external demands.

Canada has been among the world's largest importers of private long-term capital. The very substantial capital formation which was a feature particularly of the 1950's was associated with an unprecedented growth in the country's external liabilities. These investments contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and added significantly to Canadian production, employment and income. At the same time they added substantially to the continuing burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to \$27,800,000,000 at the end of 1961; non-resident-owned long-term investments in Canada had reached a book value of \$23,600,000,000, having more than tripled since the end of World War II (by the end of 1963 they totalled well over \$25,000,000,000). The part of these investments in establishments controlled outside of Canada totalled \$13,700,000,000. These direct investments have been growing more rapidly than the total. Investments in other Canadian equities, although smaller, have also been substantial and there have been periods in recent years of sharp increase in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside of Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled \$9,800,000,000 at the end of 1961 and government-owned assets made up a substantial part of that total. Canada's net balance of international indebtedness, including equity investments, at the same date was estimated at \$17,900,000,000, almost two thirds of which was incurred in the eight years since 1953. By the end of 1962, Canada's net balance of international indebtedness had risen to well over \$19,000,000,000.

Foreign Investments in Canada.—Dependence upon external sources of capital for financing in earlier periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth period that occurred before World War I the rate of increase in non-resident investment was very high and dependency upon external sources of capital was greater than in later periods. Total non-resident investments in Canada increased from an estimated \$1,232,000,000 in 1900 to \$3,837,000,000 by 1914, mainly in the form of bonded debt for railway and other expansion guaranteed by the Canadian Government. This was the period when the principal external source

* A more extended historical review appears in DBS report *Canada's International Investment Position, 1928 to 1954* (Catalogue No. 67-503) and more recent statistics in the annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201).

of capital was London, and in 1914 British investments in Canada were estimated at \$2,778,000,000. By the same date, United States investments, although they had been increasing rapidly, had only about one third of the value of British-owned investments.

During the first part of the inter-war period the United States became the principal source of external capital, and by 1926 the United States-owned portion of Canada's international debt exceeded that owned in Britain, which had not increased since 1914. Growth in United States investments in Canada continued for some years but was interrupted in the 1930's when the total was reduced by repatriations of securities and other withdrawals of capital. Increases began again in the 1940's and by the end of World War II United States investments of \$4,990,000,000 compared with British investments of \$1,750,000,000. The latter had been reduced by wartime repatriation measures and the proceeds were used in financing British expenditures in Canada. Following the War, up to 1948, some further declines occurred in British investments in Canada but since then they have increased.

United States investments have risen each year since the end of World War II, particularly since 1947 when the period of intense activity in the petroleum industry got under way following new discoveries. More than half the growth in United States investment in Canada has occurred since 1953. At \$17,966,000,000, United States investments in 1961 continued to represent more than three quarters of all non-resident investments in Canada and also made up a similar ratio of the increase since 1953. The main rise occurred in direct investments in companies controlled in the United States, which are prominent in many branches of Canadian industry. By 1961 these had increased to well over twice their value in 1953. In the same period portfolio investments in Canada owned in the United States rose by more than four fifths. A considerable part of this latter rise occurred in the period 1956-59 when large sales of new issues of securities were made in that country.

British investments in Canada totalled \$3,385,000,000 at the end of 1961. Although these investments then exceeded by more than \$600,000,000 the levels reached at the end of World War I and again in the early 1930's, they accounted for only about 14 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. British investments in Canada had more than doubled from the low point in 1948; the increase had been particularly concentrated in direct investments which had more than quadrupled and which, at the end of 1961, represented a much larger portion of the total than in the prewar period. In absolute terms, this rise in total British investments in Canada was slightly below the rise in investments by all other overseas countries in the same period, although the rate of increase was lower.

Investments of countries other than the United States and Britain reached a record total of \$2,219,000,000 at the end of 1961. Exceeding four times the corresponding 1952 figure, this represented a much higher rate of increase than had occurred in either United States or British investments and large increases had taken place in portfolio holdings of securities as well as in direct investments. At about 10 p.c. of the total, this group of countries, mostly in Western Europe, made up a larger portion of total investments than ever before. Over 90 p.c. of the direct investments, which totalled \$840,000,000 in 1961, also came from Western Europe; more than one quarter was of Belgian origin with Dutch, French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1955 the net use of foreign resources amounted to about one fifth of net capital formation in Canada, and direct foreign financing amounted to about one third. But from 1956 to 1960 when these ratios had increased considerably to 33 p.c. and 45 p.c., respectively, they were still less than the corresponding ratios in the period 1929 to 1930 when inter-war investment activity was at its highest point. In that shorter period more than one half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was

financed by external capital. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing predominate such as in merchandising, agriculture, housing, public utilities, and other forms of social capital. Thus, non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate, and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1959 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 51 p.c. owned by non-residents but capital subject to foreign control was 57 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as the end of 1954. In the field of petroleum and natural gas, non-resident ownership and control amounted to 63 p.c. and 75 p.c., respectively, at the end of 1959 whereas at the end of 1951 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 59 p.c. and 61 p.c., respectively, compared with 53 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence non-resident ownership of business as a whole, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 34 p.c. in 1959 (the last year for which the calculation has been made). But, in the same years, companies subject to non-resident control increased from 25 p.c. to 32 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

The petroleum and natural gas industry, including exploration and development, refining, merchandising, pipelines and other distribution facilities, has been the largest single recipient of capital inflows in the postwar period, accounting directly for far more than 40 p.c. of the inflow of United States capital for direct investment in Canada. By the end of 1959, investments in Canadian petroleum concerns controlled in the United States made up 69 p.c. of the total. Another 6 p.c. of the investment was controlled in overseas countries. Investments owned in the United States and overseas were 57 p.c. and 6 p.c., respectively, of the total.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled in the United States. Such establishments having an investment of \$1,000,000 or more accounted for about 30 p.c. of Canadian manufacturing production in 1953 and 21 p.c. of employment in that field. These ratios in non-resident-controlled plants were considerably higher than in 1946—the previous year for which a study of this kind was made.

In some industries the proportions of production and employment in plants controlled in the United States were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Among other industries where well over one half of the production is in United States-controlled firms are the smelting and refining of non-ferrous metals, petroleum refining, rubber products, and motor vehicle parts. In several major industries like electrical apparatus and supplies and non-ferrous metal products the distribution of control between Canadian and United States-controlled companies is more evenly divided. In other industries the non-resident share is large although less than one half the total. These include pulp and paper, other paper products, chemicals, medicinal and pharmaceutical products, sheet-metal products, and certain branches of the machinery industry.

There are, however, many industries where the largest part of production is in Canadian-controlled plants. Prominent among these are such important branches of

industry as primary iron and steel, and some other subdivisions of the iron and steel industry, textiles, clothing, and divisions of the foods and beverages industry, such as bakery products, beverages and dairy products. But even in some of these industries changes in ownership and control have been occurring in recent years.

18.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1939-61

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions [¹000 millions] of dollars)

Item	1939	1945	1949	1955 [*]	1958 [*]	1959 [*]	1960 [*]	1961 ^p
Canadian Liabilities—								
Direct investments.....	2.3	2.7	3.6	7.7	10.9	11.9	12.9	13.7
Government and municipal bonds.....	1.7	1.7	1.8	1.9	2.6	3.1	3.3	3.4
Other portfolio investments.....	2.6	2.4	2.3	3.3	4.4	4.5	4.7	4.7
Miscellaneous investments.....	0.3	0.3	0.3	0.6	1.1	1.3	1.4	1.7
Totals, Non-resident Long-Term Investment in Canada.....	6.9	7.1	8.0	13.5	19.0	20.9	22.2	23.6
Equity of non-residents in Canadian assets abroad.....	0.2	0.2	0.3	0.7	0.9	1.0	1.1	1.2
Canadian dollar holdings of non-residents.....	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6
Canadian short-term assets of international financial agencies.....	—	—	0.3	0.2	0.2	0.4	0.4	0.4
Gross Liabilities¹.....	7.4	7.6	8.9	14.8	20.6	22.7	24.3	25.7
United States ¹	4.5	5.4	6.4	11.1	15.5	17.0	18.0	19.3
Britain ¹	2.6	1.8	1.8	2.5	3.2	3.4	3.5	3.5
Other countries ^{1, 2}	0.3	0.4	0.7	1.2	1.9	2.4	2.8	2.8
Short-term payables ³.....	..	0.4	0.4	0.5	1.2	1.6	1.7	2.1
Gross Liabilities.....	..	8.0	9.3	15.3	21.8	24.3	26.1	27.8
Canadian Assets—								
Direct investments.....	0.7	0.7	0.9	1.7	2.1	2.3	2.5	2.6
Portfolio investments.....	0.7	0.6	0.6	1.0	1.1	1.2	1.3	1.5
Government of Canada loans and advances.....	—	0.7	2.0	1.6	1.5	1.5	1.4	1.4
Government of Canada subscriptions to international financial agencies.....	—	—	0.4	0.4	0.4	0.6	0.6	0.6
Totals, Canadian Long-Term Investments Abroad.....	1.4	2.0	4.0	4.7	5.1	5.5	5.8	6.1
Government of Canada holdings of gold and foreign exchange.....	0.5	1.7	1.2	1.9	1.9	1.8	1.8	2.2
Bank balances and other short-term funds abroad.....	—	0.1	0.1	0.3	1.0	1.0	1.2	1.1
Gross Assets¹.....	1.9	3.8	5.2	7.0	7.9	8.4	8.8	9.4
Government of Canada holdings of gold and foreign exchange.....	0.5	1.7	1.2	1.9	1.9	1.8	1.8	2.2
United States ^{1, 4}	0.9	0.9	1.1	2.2	3.1	3.3	3.7	3.8
Britain ^{1, 4}	0.1	0.7	1.6	1.4	1.4	1.4	1.4	1.6
Other countries ^{1, 2}	0.4	0.5	1.3	1.4	1.6	1.9	1.9	1.9
Short-term receivables ³.....	..	0.1	0.2	0.3	0.5	0.5	0.5	0.5
Gross Assets.....	..	4.0	5.5	7.4	8.4	8.8	9.3	9.8
Canadian Net International Indebtedness—Net Liabilities.....	5.5¹	4.0	3.8	7.8	13.4	15.4	16.8	17.9
Government of Canada holdings of gold and foreign exchange.....	-0.5	-1.7	-1.2	-1.9	-1.9	-1.8	-1.8	-2.2
United States ^{1, 4}	3.6	4.6	5.3	8.8	12.4	13.6	14.4	15.5
Britain ^{1, 4}	2.5	1.1	0.2	1.1	1.9	2.0	2.1	2.1
Other countries ^{1, 2}	-0.1	-0.1	-0.6	-0.2	0.3	0.5	0.9	0.9
Short-term indebtedness ³.....	..	0.3	0.2	0.2	0.7	1.1	1.3	1.6

¹ Excludes short-term commercial indebtedness. ² Includes international financial agencies. ³ Country distribution not available. ⁴ Excludes Government of Canada holdings of gold and foreign exchange.

19.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1930-61
(Millions of dollars)

Type of Investment	1930	1945	1951	1955	1956	1958	1959	1960 ²	1961 ²
Government Securities—									
Federal.....	682	726	1,013	529	502	564	612	611	657
Provincial.....	592	624	771	888	1,081	1,276	1,585	1,632	1,743
Municipal.....	432	312	319	452	552	781	915	1,026	1,038
Totals, Government Securities	1,706	1,662	2,103	1,869	2,135	2,621	3,112	3,269	3,438
Public Utilities—									
Railways.....	2,244	1,599	1,436	1,364	1,426	1,413	1,405	1,406	1,366
Other (excluding pipelines and public enterprises).....	634	493	524	574	628	712	739	743	649
Totals, Public Utilities	2,878	2,092	1,960	1,938	2,054	2,125	2,144	2,149	2,015
Manufacturing (excluding petroleum refining).....	1,459	1,723	2,715	4,025	4,579	5,381	5,726	6,115	6,445
Petroleum and natural gas.....	150	160	693	1,854	2,275	3,187	3,455	3,727	4,023
Other mining and smelting.....	311	356	586	1,121	1,330	1,657	1,783	1,977	2,089
Merchandising.....	190	220	377	616	683	784	878	872	917
Financial.....	543	525	595	1,231	1,488	1,938	2,190	2,380	2,614
Other enterprises.....	82	70	120	178	207	254	284	297	348
Miscellaneous investments.....	295	284	328	641	818	1,063 ¹	1,285	1,428	1,681
Totals, Investment	7,614	7,092	9,477	13,473	15,569	19,010	20,857	22,214	23,570
United States².....	4,660	4,990	7,259	10,275	11,789	14,441	15,826	16,718	17,966
Britain ²	2,766	1,750	1,778	2,356	2,668	3,088	3,199	3,359	3,385
Other countries.....	188	352	440	842	1,112	1,481	1,832	2,137	2,219

¹ New series.² Includes some investments held for residents of other countries.

20.—Foreign Capital Invested in Canada by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1961²

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States ¹	Britain ¹	Other Countries	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government Securities—				
Federal.....	416	50	191	657
Provincial.....	1,641	67	35	1,743
Municipal.....	992	30	16	1,038
Totals, Government Securities	3,049	147	242	3,438
Public Utilities—				
Railways.....	506	699	161	1,366
Other (excluding pipelines and public enterprises).....	506	75	68	649
Totals, Public Utilities	1,012	774	229	2,015
Manufacturing (excluding petroleum refining).....	5,135	995	315	6,445
Petroleum and natural gas.....	3,434	299	290	4,023
Other mining and smelting.....	1,818	147	124	2,089
Merchandising.....	629	238	50	917
Financial.....	1,773	612	329	2,614
Other enterprises.....	282	50	16	348
Miscellaneous investments.....	834	223	624	1,681
Totals, Investments	17,966	3,385	2,219	23,570

¹ Includes some investments held for residents of other countries.

Canadian Assets Abroad.—While there has been a great growth in non-resident investment in Canada and in the balance of indebtedness to other countries, it will be noted that Canadian assets abroad, shown in Tables 21 and 22, have continued to rise in value each year. These now represent a larger proportion of liabilities abroad than was the case before World War II, but more than half of the increase since then has been in government-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the war and early postwar years. At the end of 1962 the government credits outstanding had a value of \$1,379,000,000 while official holdings of exchange amounted to \$2,154,000,000 in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank for Reconstruction and Development, the International Development Association, the International Finance Corporation and the International Monetary Fund which, by March 1963, amounted to \$80,500,000, \$24,900,000, \$3,500,000, and \$577,300,000, respectively; these were more than offset by liabilities to these institutions, including outstanding assistance to Canada by the International Monetary Fund.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. Private long-term investments abroad by Canadians in 1961 were made up of direct investments of \$2,619,000,000 and portfolio investments of \$1,465,000,000. More than two thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields, among which the beverage and farm implement industries are particularly noteworthy.

Private investments in overseas countries are widely distributed. Somewhat more than one half of the total in 1961 were located in Commonwealth countries, with slightly more in Britain than in the remainder of the Commonwealth. Most of the direct investments in Britain were in industry, while in other Commonwealth countries there were investments in mining and petroleum as well as in industry. In foreign overseas countries the largest part is in the countries of Latin America where Canadian holdings in public utilities are substantial.

21.—Canadian Assets Abroad, 1939, 1948 and 1955-61

NOTE.—Excludes investments of insurance companies and banks, Canada's subscriptions to international financial institutions and short-term assets, other than official holdings of gold and foreign exchange. Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates. The series for portfolio investment was reconstructed in 1952 and is not strictly comparable with preceding years.

(Millions of dollars)

Assets	1939	1948	1955	1956	1957*	1958*	1959*	1960*	1961*
Direct investments in businesses outside Canada.....	671	788	1,742	1,891	2,073	2,149	2,295	2,481	2,619
Portfolio holdings of foreign securities.....	719	605	991	1,006	1,068	1,118	1,183	1,315	1,465
Government credits.....	31	1,878	1,635	1,565	1,515	1,484	1,451	1,418	1,379
Official balances abroad and gold.....	459	1,006	1,908	1,866	1,807	1,879	1,786	1,830	2,154
Totals.....	1,880	4,277	6,276	6,328	6,463	6,630	6,715	7,044	7,617

22.—Canadian Assets Abroad, by Location of Investment, as at Dec. 31, 1961^a

NOTE.—See headnote to Table 21.

Location of Investment	Direct Invest- ments	Portfolio Investment		Government Credits	Official Holdings of Exchange	Total Invest- ments
		Stocks	Bonds			
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
United States.....	1,747	938	119	—	1,158	3,962
Britain.....	288	45	16	1,030	9	1,388
Other Commonwealth countries.....	280	11	30	30	—	351
Other foreign countries.....	304	195	111	319	—	929
Official gold holdings.....	—	—	—	—	987	987
Totals.....	2,619	1,189	276	1,379	2,154	7,617

CHAPTER XXIII.—CURRENCY AND BANKING; MISCELLANEOUS COMMERCIAL FINANCE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CURRENCY AND BANKING*

Section 1.—The Bank of Canada

The Bank of Canada is Canada's central bank. It was incorporated under the Bank of Canada Act in 1934 and commenced operations on Mar. 11, 1935. The Act of Parliament which established the central bank charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it certain specific powers for discharging this responsibility. Through the exercise of these powers, the Bank of Canada determines broadly the combined total of the basic forms of Canadian money held by the community—currency outside banks plus deposit balances in chartered bank accounts.

By virtue of the provisions of the Bank of Canada Act, which enable the central bank to increase or decrease the total amount of cash reserves available to the chartered banks as a group, the Bank of Canada is able to determine broadly the over-all level of the total assets and deposit liabilities of the group, and hence of the combined total of currency and bank deposits. The Bank Act requires that each chartered bank maintain a minimum amount of cash reserves in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. This minimum requirement is 8 p.c. of the bank's total Canadian dollar deposit liabilities on a monthly average basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities therefore depends on the level of total cash reserves. An increase in cash reserves will encourage the banks to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada can affect the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group

* Except where otherwise indicated, this material has been revised by the Research Department of the Bank of Canada.

and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in reserves of the chartered banks and makes it necessary for them to reduce their assets and deposit liabilities.

The influence that the Bank of Canada has on credit conditions and hence on economic behaviour stems from its ability to determine broadly the level of total holdings of currency and chartered bank deposits. The trend of total holdings of these forms of money can have an influence on liquidity generally, including effects on interest rates and bond prices and the availability of credit, and on expectations regarding future financial and economic trends, all of which have some effect on decisions to spend or to save. However, many factors other than changes in the money supply also have important influences on financial and economic developments, such as: the state of economic conditions and prospects outside Canada; the competitive strength of Canadian business enterprises both at home and abroad; the character of the investment decisions and price and wage policies in domestic industries; the skills and degree of mobility of labour; and the nature of public policies at all levels of government with regard to such matters as expenditure, taxation, subsidies and the regulation of industry. In forming its judgments, the Bank of Canada is bound by criteria laid down by Act of Parliament in the preamble to the Bank of Canada Act of 1934. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing state of the economy as reflected in the complex pattern of economic and financial developments.

While the Bank of Canada has the power to determine the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. That depends on the wishes of the public, since deposits can be converted freely into notes and coin and back again. Nor does the Bank have any direct control over the growth of other forms of money or of close substitutes for money as a store of wealth in liquid form, of which there are many varieties in Canada—mainly deposit balances in savings institutions other than chartered banks and short-term securities issued by governments and corporations.

The cash reserve system in Canada, which is similar to that in a number of other countries, while placing the central bank in a position where it can determine within broad limits the total amount of chartered bank assets and deposits, leaves the allocation of bank credit and other forms of credit to the private sector of the economy. Each chartered bank can attempt to gain as large a share as possible of the total cash reserves by competing for deposits. Each bank determines how its assets will be distributed, for example, between various kinds of securities and loans to various types of borrowers. The Bank of Canada has no power to direct banks or other lenders to make funds available to certain groups or in certain regions on the same terms or on different terms than to other groups or in other regions. The influence of the central bank—based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities—is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are set forth in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938 and 1954. Some of these powers are outlined below.

The Bank may buy and sell securities issued or guaranteed by Canada or any province, short-term securities issued by Britain, treasury bills or other obligations of the United States, and certain classes of short-term commercial paper. The Bank is authorized by the Industrial Development Bank Act to purchase bonds and debentures issued by the Industrial Development Bank. The Bank may buy and sell gold, silver, nickel and bronze coin, and gold and silver bullion, and may also deal in foreign exchange. The Bank may accept deposits that do not bear interest from the Government of Canada, the government of any province, any chartered bank or any bank to which the Quebec Savings Bank Act applies. The Bank does not accept deposits from individuals and does not compete with the chartered banks in commercial banking fields.

The Bank acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada.

The Bank has the sole right to issue paper money for circulation in Canada. Details regarding the note issue are given on p. 1046.

The Bank of Canada may vary the minimum cash reserve requirement of the chartered banks between 8 p.c. and 12 p.c. of their Canadian dollar deposit liabilities, provided that the chartered banks are given a minimum notice period of one month before each increase becomes effective and that any increase is not more than 1 p.c. during any one month. When this legislation became effective on July 1, 1954, the requirement was 8 p.c. and it has since remained at that level.

The Bank may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge or hypothecation of certain classes of securities. Loans or advances on the pledge or hypothecation of readily marketable securities issued or guaranteed by Canada or any province may be made to the Government of Canada or the government of any province for periods not exceeding six months. Other loans may be made to the Government of Canada or the government of any province in amounts not exceeding a fixed proportion of such government's revenue; such loans must be repaid before the end of the first quarter after the end of the fiscal year of the borrower.

The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. From Nov. 1, 1956 until June 24, 1962, the Bank Rate was established weekly at a fixed margin of $\frac{1}{4}$ of 1 p.c. above the latest weekly average tender rate for 91-day treasury bills. On June 24, 1962, the Bank Rate was fixed at 6 p.c.; it was reduced to $5\frac{1}{2}$ p.c. on Sept. 7, 1962, to 5 p.c. on Oct. 12, 1962, to 4 p.c. on Nov. 13, 1962 and to $3\frac{1}{2}$ p.c. on May 6, 1963; it was increased again to 4 p.c. on Aug. 11, 1963. Since June 24, 1962, the Money Market Rate, the rate at which the Bank of Canada is prepared to enter into purchase and resale agreements with money market dealers, has been $\frac{1}{4}$ of 1 p.c. above the average rate on 91-day treasury bills at the preceding weekly tender, or the same as Bank Rate, whichever is lower.

The Bank of Canada is not required to maintain a minimum or fixed ratio of gold or foreign exchange to its liabilities unless the Governor in Council prescribes otherwise.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor General in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor General in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, one Director and the Deputy Minister of Finance (who is without a vote) which has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The Governor is the chief executive officer of the Bank and Chairman of the Board of Directors. The Governor has the power to veto any action or decision of the Board of Directors or of the Executive Committee but such veto is subject to confirmation or disallowance by the Governor General in Council. In the absence of the Governor, the Deputy Governor, who is a member of the Board, exercises all the powers and functions of the Governor.

The capital of the Bank is \$5,000,000 and is held entirely by the Minister of Finance. The Bank of Canada Act as amended in 1954 provides that each year 20 p.c. of the Bank's annual profits (after provision for depreciation in assets, pension funds and such matters)

shall be allocated to the Rest Fund until the Rest Fund reaches an amount five times the paid-up capital of the Bank and the remainder shall be paid to the Receiver General and placed to the credit of the Consolidated Revenue Fund. At the end of 1957, the Rest Fund of the Bank reached its maximum of \$25,000,000 so that, since that date, the whole of the Bank's profits have been transferred to the Receiver General.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown. The agencies are concerned chiefly with the functions of the Bank as fiscal agent for the Government of Canada and with the issue and redemption of currency. The Industrial Development Bank, which is described below, is a subsidiary of the Bank of Canada.

The Bank of Canada Act requires that statements of the assets and liabilities of the Bank on each Wednesday and on the last day of each month be published in the *Canada Gazette*. A summary of the statements as at Dec. 31, 1959-62, appears in Table 1.

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1959-62

Item	1959	1960	1961	1962
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Assets				
Foreign exchange.....	41.2	54.5	44.8	47.4
Bankers' acceptances.....	—	—	—	3.3
Investments—				
Treasury bills of Canada.....	305.9	404.4	312.2	455.2
Other securities issued or guaranteed by Canada maturing within 2 years.....	514.5	353.4	513.9	446.6
Other securities issued or guaranteed by Canada not maturing within 2 years.....	1,800.2	1,931.9	1,999.6	1,980.8
Bonds and debentures issued by Industrial Development Bank.....	58.6	64.4	88.0	127.1
Other securities.....	18.5	24.4	25.0	25.7
Industrial Development Bank capital stock.....	25.0	25.0	27.0	31.0
Bank premises.....	10.9	11.5	10.6	10.7
All other assets.....	193.3	175.0	221.9	103.3
Totals, Assets	2,968.1	3,044.4	3,242.9	3,231.1
Liabilities				
Capital paid up.....	5.0	5.0	5.0	5.0
Rest Fund.....	25.0	25.0	25.0	25.0
Notes in Circulation—				
Held by chartered banks.....	315.7	329.8	346.6	416.8
All other.....	1,704.8	1,731.9	1,800.2	1,817.0
Deposits—				
Government of Canada.....	45.6	35.7	41.4	42.9
Chartered banks.....	637.0	662.6	749.4	745.6
Other.....	34.8	33.3	33.4	38.1
Foreign currency liabilities.....	50.0	68.6	59.0	61.1
All other liabilities.....	150.2	152.5	182.8	79.6
Totals, Liabilities	2,968.1	3,044.4	3,242.9	3,231.1

The Industrial Development Bank.—The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:—

“To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises.”

The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada and the Deputy Minister of Trade and Commerce. The authorized capital of the Bank is \$50,000,000 and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed five times the aggregate of the Bank's paid-up capital and Reserve Fund.

The Bank may extend financial assistance to industrial enterprises in Canada which, by definition in the Act, include any industry, trade or other business undertaking of any kind. With respect to such enterprises the Bank is empowered to lend money or guarantee loans; and where an enterprise is a corporation the Bank may also enter into underwriting agreements with regard to any issue of stock, bonds or debentures; acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank has entered into an underwriting agreement; and acquire certificates issued by a trustee to finance the purchase of transportation equipment. The total amount of commitments of the Bank, in the form of loans, guarantees, etc., in excess of \$200,000 each, may not exceed \$200,000,000.

The Bank may accept any form of collateral security against its advances, including realty and chattel mortgages which constitute the usual kind of security taken. The Bank is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of Incorporation provides that it should extend credit only when, in the Bank's opinion, credit or other financial resources would not otherwise be available on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has branch offices in the following cities: St. John's, Halifax, Saint John, Moncton, Quebec, Trois Rivières, Montreal, Ottawa, Toronto, Hamilton, Waterloo, London, Sudbury, Port Arthur, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver, Victoria, Kelowna and Windsor.

2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1959-62

Item	1959	1960	1961	1962
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Assets—				
Loans outstanding ¹	96.9	103.1	123.3 ^r	164.9
Other assets.....	1.8	3.7	1.7 ^r	2.2
Totals, Assets.....	98.7	106.8	125.0	167.1
Liabilities—				
Capital and reserves.....	39.4	41.8	44.2	49.0
Bonds and debentures outstanding.....	57.7	63.6	78.9	115.3
Other liabilities.....	1.6	1.4	1.9	2.8
Totals, Liabilities.....	98.7	106.8	125.0	167.1
Loan Transactions—				
Disbursements.....	29.3	29.7	47.5	74.3
Repayments.....	20.4	23.4	27.1	32.6
Loans outstanding plus undistributed authorizations.....	109.1	119.8	154.2	203.6
	No.	No.	No.	No.
Customers on books.....	1,609	1,966	2,768	4,083

¹ Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.

Section 2.—Currency

Note Circulation.—The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves.

The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

3.—Bank of Canada Note Liabilities and Other Notes in Circulation, as at Dec. 31, 1958-62

Denomination	1958	1959	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000
Bank of Canada Notes—					
\$1.....	75,873	78,402	81,733	86,114	91,426
\$2.....	53,597	55,076	57,622	60,640	63,837
\$5.....	143,010	144,702	149,545	156,501	162,643
\$10.....	533,078	521,309	519,559	533,041	548,442
\$20.....	627,814	647,276	676,549	719,713	766,974
\$25.....	46	46	46	46	46
\$50.....	143,606	145,461	147,596	152,106	155,938
\$100.....	391,629	395,383	396,328	407,307	413,460
\$500.....	49	46	41	38	37
\$1,000.....	15,928	19,549	19,547	18,198	17,951
Totals.....	1,984,630	2,007,250	2,048,567	2,133,704	2,220,755
Chartered banks' notes ¹	8,655	8,519	8,423	8,363	8,314
Dominion of Canada notes ¹	4,645	4,641	4,638	4,637	4,637
Provincial notes ¹	28	28	28	28	28
Defunct banks' notes ¹	88	88	88	88	88
Totals, Bank of Canada Note Liabilities...	1,998,046	2,020,525	2,061,743	2,146,820	2,233,822
Held by—					
Chartered banks.....	338,176	315,703	329,841	346,630	416,845
Others.....	1,659,870	1,704,822	1,731,902	1,800,190	1,816,977

¹ Note issues in the process of being retired, the liability for which has been taken over by the Bank of Canada from the original issuers.

4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1953-62

As at Dec. 31—	Bank of Canada Notes ¹	Per Capita	As at Dec. 31—	Bank of Canada Notes ¹	Per Capita
	\$	\$		\$	\$
1953.....	1,335,332,954	89.95	1958.....	1,659,870,299	97.18
1954.....	1,361,874,433	89.09	1959.....	1,704,822,198	97.51
1955.....	1,449,045,166	92.31	1960.....	1,731,902,386	96.92
1956.....	1,497,765,781	93.14	1961.....	1,800,190,122	98.70
1957.....	1,555,115,143	93.63	1962.....	1,816,977,132	98.33

¹ Total issue less notes held by chartered banks.

Coinage.*—Under the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), gold coins may be issued in denominations of twenty dollars, ten dollars and five dollars (nine-tenths fine or millesimal fineness, 900). Subsidiary coins include: silver coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (eight-tenths fine or millesimal fineness, 800); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchange Fund Act for the payment of any amount; in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

5.—Canadian Coin in Circulation, as at Dec. 31, 1953-62

NOTE.—The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

As at Dec. 31—	Silver	Nickel	Tombac ¹	Steel	Bronze	Total	Per Capita
	\$	\$	\$	\$	\$	\$	\$
1953.....	89,550,236	7,813,081	570,847	3,109,691	12,130,181	113,174,036	7.62
1954.....	91,350,637	7,810,723	560,577	3,458,758	12,392,389	115,573,084	7.56
1955.....	95,574,457	8,076,800	555,912	3,457,712	12,956,807	120,621,688	7.68
1956.....	100,922,477	8,545,507	552,868	3,456,782	13,742,282	127,219,916	7.91
1957.....	107,116,450	8,910,869	550,743	3,455,886	14,745,243	134,779,191	8.11
1958.....	115,120,076	9,289,481	549,630	3,455,062	15,322,156	143,736,405	8.42
1959.....	123,344,059	9,865,012	549,237	3,454,209	16,150,222	153,362,739	8.77
1960.....	136,710,958	11,599,263	549,090	3,452,876	16,895,953	169,208,140	9.47
1961.....	146,902,352	14,110,198	549,021	3,451,708	18,311,853	183,325,132	10.05
1962.....	162,928,707	16,433,088	549,009	3,450,676	20,595,543	203,957,023	10.98

¹ Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

The Royal Canadian Mint.*—The Mint at Ottawa was established as a branch of the Royal Mint under the (Imperial) Coinage Act 1870 and opened on Jan. 2, 1908. In 1931 (RSC 1952, c. 240) it was constituted a branch of the Canadian Department of Finance and has since operated as the Royal Canadian Mint. In its earlier years the operations of the Mint in Canada were confined to the production of gold, silver and bronze coins for domestic circulation and of British sovereigns and small coins struck under contract for Newfoundland and Jamaica. Before 1914 only small quantities of gold bullion

* Revised by the Master of the Royal Canadian Mint, Ottawa.

were refined but during World War I the Mint came to the assistance of the British Government by establishing a refinery in which nearly 20,000,000 oz.t. of South African gold were treated on Bank of England account. The subsequent development of the gold mining industry in Canada resulted in gold refining becoming one of the principal activities of the Mint. Fine gold produced from the rough bullion shipments received from the mines is purchased by the Mint and later delivered to the Bank of Canada for account of the Minister of Finance in bars of approximately 400 oz.t. each or, for those mines authorized to sell gold in the open market, the bullion is shipped according to instructions from the mines. The fine silver extracted from the rough gold is generally used for coinage purposes.

6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1953-62

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Steel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	\$	\$	\$	\$
1953.....	3,684,074	3,626,497	6,138,686	234	831,915	655,130
1954.....	3,829,431	3,998,836	1,864,968	27	350,229	263,897
1955.....	3,947,637	3,952,764	4,269,157	267,801	—	566,863
1956.....	3,801,789	3,774,599	5,389,464	469,993	—	786,855
1957.....	3,896,084	3,776,711	6,236,429	366,493	—	1,004,221
1958.....	3,958,459	4,088,706	8,044,753	379,616	—	578,274
1959.....	3,908,640	3,836,680	8,273,563	576,680	—	829,116
1960.....	4,024,626	4,014,771	13,432,251	1,735,707	—	748,101
1961.....	3,800,137	3,812,054	10,299,581	2,512,369	—	1,417,544
1962.....	3,488,974	3,520,406	16,114,240	2,324,212	—	2,284,925

Dollar Currency and Bank Deposits.—Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 7.

7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1953-62 (Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits ¹		
	Notes	Coin	Total	Personal Savings Deposits ²	Government of Canada Deposits	Other Deposits ^{1,2}	Total ¹	Total Including Government Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits ²
1953.....	1,335	94	1,430	4,756	473	3,130	8,359	9,789	9,316	4,560
1954.....	1,362	96	1,458	5,218	176	3,462	8,856	10,314	10,137	4,920
1955.....	1,449	101	1,550	5,633	517	3,697	9,847	11,397	10,880	5,248
1956.....	1,498	108	1,605	6,007	246	3,580	9,833	11,438	11,192	5,185
1957.....	1,555	112	1,667	6,108 ²	423	3,725 ²	10,256	11,923	11,500	5,392 ²
1958.....	1,660	121	1,781	6,844	319	4,303	11,466	13,247	12,927	6,084
1959.....	1,705	128	1,832	6,900	404	4,057	11,360	13,193	12,789	5,890
1960.....	1,732	144	1,876	7,215	510	4,313	12,037	13,914	13,404	6,189
1961.....	1,800	158	1,959	7,618	558	4,998	13,205	15,163	14,575	6,957
1962.....	1,817	177	1,994	7,932	564	5,193	13,689	15,683	15,119	7,187

¹ Less total float, i.e., cheques and other items in transit.

² The deposit balances of religious, educational and welfare institutions and personal accounts used mainly for business purposes were reclassified from "personal savings deposits" to "other notice deposits" as at Sept. 30, 1957, in the returns of the banks to the Department of Finance; from that date the figures are thus not comparable with those for previous years. The amount of deposits reclassified was approximately \$140,000,000.

Section 3.—The Commercial Banking System*

The Canadian commercial banking system consists of eight privately owned banks, chartered by Parliament and operating under the provisions of the Bank Act. Of these eight, five are nation-wide institutions; two operate mainly in the Province of Quebec and in other French-speaking areas and one, a subsidiary of a Netherlands bank, has a branch in each of the three largest cities. At the end of 1962, these banks together operated 5,496 banking offices of which 5,332 were in Canada and 164 abroad. Thus, the chief distinguishing feature of the Canadian banking system is the relatively small number of large banks having an extensive network of branches, operating under a single legislative jurisdiction (the Federal Government) and under one detailed and comprehensive statute (the Bank Act).

Since the first banks were established during the first quarter of the nineteenth century, the commercial banking system has developed in response to the changing needs of the Canadian economy, an evolution which is still in rapid progress. Canadian economic development has been characterized by two main features—successive but by no means continuous periods of rapid geographical expansion of settlement, and a continued dependence on export markets as new natural resources (agricultural land, forests and minerals) were exploited. Thus, Canadian banking has continually had to migrate to new areas and to find appropriate methods of financing new industries and new products; and it has from the beginning possessed a strongly 'international' character† with much emphasis on the financing of foreign trade, on foreign exchange operations, and on correspondent relations with foreign banks. At the same time, as regional isolation has gradually broken down and the economy has been integrated, banks originating in local areas have become part of a nation-wide banking system, in part by process of amalgamation particularly marked in the first twenty-five years of the present century.

Bank Legislation

From the first, banks in what is now Canada sought to operate under Acts of incorporation (charters) passed by the legislatures of the colonies in which they operated. As new banks were incorporated and older ones obtained charter renewals, there developed in the bank charters themselves a quite extensive and fairly uniform code of banking law. At Confederation, responsibility for banking and currency was given to the Dominion Government and in 1871 the first general Bank Act was passed. This legislation is subject to review and revision every ten years, a feature that has helped to keep the banking system adapted to the needs of a changing economy.

Certain characteristic features of the Canadian financial system have thus emerged—notably the traditional emphasis of the chartered banks on "commercial" banking. The early banks were established by merchants for merchants. Their note issues provided a badly needed medium of internal exchange and they advanced working capital to finance the processes of trade. The aim was to make lending as far as possible short-term and self-liquidating. The bank charters from the first contained prohibitions against lending on the security of real property, except as secondary or subsequent security. Now, however, exceptions to the rule against lending upon security of real property, incorporated in the Bank Act in 1944 and 1954, allow the banks to participate in government-guaranteed loans to farmers and fishermen and for housing constructed under the National Housing Act, to lend to oil companies on the security of oil "in, under or upon the ground" and production equipment, and to extend their consumer-finance lending by taking chattel

* More detail is included in an article appearing in the 1961 Year Book, pp. 1115-1120, prepared by J. Douglas Gibson, General Manager of The Bank of Nova Scotia. The early history of currency and banking in Canada is given in the 1938 Year Book, pp. 900-905. A list of the banks at Confederation appears in the 1940 Year Book, p. 897, and bank absorptions since 1867 are given in the 1941 edition, pp. 812-813. A table in the 1937 Year Book, pp. 894-895, shows the insolvencies since Confederation; the last insolvency occurred in 1923.

† The larger Canadian banks have long maintained offices in London and New York. In addition, some Canadian banks for more than half a century have been providing an important part of the commercial banking facilities in the Caribbean area (see Table 10, p. 1054). The Bank of Montreal opened an office in Tokyo in January 1962, the first to be established in Japan by a Canadian bank.

mortgages. It is also permissible for banks to make advances on the security of natural products and goods, wares and merchandise while they remain in the borrower's possession. These 'pledge' arrangements have facilitated loans to small businesses and farmers and have aided in commercial and manufacturing development, while giving the banks a reasonable degree of protection for their loans.

Today the Bank Act has become a most detailed and comprehensive piece of legislation which provides for the internal regulation and organization of the banks, for the auditing of their accounts, and for the ways in which their capital stock may be issued and transferred, their dividends paid, and their affairs settled in case of amalgamation, winding-up or insolvency. In addition, it states what cash reserves the banks must keep, what reports they must make to the Government and to the Bank of Canada about their affairs and sets forth a variety of rules governing the conduct of business with the public. The Bank Act also specifies the maximum rate of interest that may be charged on bank loans. (Since the 1944 Bank Act Revision this ceiling has been 6 p.c., replacing the 7-p.c. ceiling that had prevailed since 1871.) The banks derive their corporate existence from the Act, which states that "each bank. . . is a body politic and corporate and this Act is its charter"; successive Bank Acts have empowered the banks to do business for a period of ten years, until the next revision of the Act.

Banking Operations

Operating under the Bank Act, the chartered banks at their branches accept deposits from the public, make loans covering a wide range of commercial, industrial, agricultural and consumer activities, deal in foreign exchange, receive and pay out Bank of Canada notes and coin, provide safekeeping facilities, and perform a variety of other services coming within the scope of the general business of banking. The head office of a Canadian bank does not transact ordinary day-to-day business with the public; it performs general administration and policy-making functions, manages the bank's investment portfolio, does its centralized accounting work, and maintains specialized departments devoted to inspection of branch operations, the development of branch office methods, the acquisition of new business, premises, staff, arrangements with foreign banks, advertising, etc.

Under its branch system, Canadian banking is able to provide standard banking facilities throughout the country. Every branch, even the smallest, can provide all banking services, and each has behind it the resources of a large bank, which means that lending requirements can be met just as well by a branch in a small town or a suburban branch as in the main branches of a large city. Branch banking also provides an excellent training for Canadian bank officers, through the system of promotion and transfer from branch to branch. Almost without exception, the chief executives of the Canadian banks have grown up in the service and have been trained in this way.

The branch system has proved to be most flexible and Canadian banking has been able to keep pace with settlement and economic development during its periods of most rapid growth. Particularly during the past quarter-century, with a rapidly expanding economy, sharply rising population and growing urbanization, new branches have opened at a very rapid rate. Offices have been established in suburban areas, in new towns, oil fields and mining camps, as well as in the long-established urban centres where industrial and commercial growth have so enlarged the demand for banking services. In all, the number of banking offices in Canada, which was about 3,300 at the end of 1939 and 3,100 at the end of 1945, grew by over 2,200 in the next seventeen years. As this growth suggests, Canadian banks have taken full advantage of the recent expansive atmosphere to extend the volume and variety of their services to industry and to individuals. Strongly competing for customers, they offer a wide variety of new deposit arrangements, including new savings programs, new forms of chequing accounts, and greatly broadened lending facilities.

By the end of the War, the banks had experienced more than fifteen years of restricted demand for commercial credit. Loans had declined sharply during the depression and shown only a slightly rising trend during the prewar years of incomplete recovery and, of

course, in the wartime economy bank lending was subject to a variety of restrictive influences. The result was a marked change in the composition of bank assets; by the end of 1945 security holdings accounted for about 55 p.c. of the banks' total assets, compared with a little over 40 p.c. just before the War and only about 15 p.c. in 1930. In the early years of postwar reconstruction, the economic control apparatus created for the War was gradually dismantled. The expansion of the private sector of the economy and the contraction of the government sector was quickly reflected in a shift of bank assets from government securities to commercial loans. Between the end of 1945 and the end of 1950, bank loans in Canadian currency increased from about 21 p.c. to 31 p.c. of total assets. There was, at the same time, a rapid growth in total assets, as the monetary authorities leaned to the side of relatively easy money conditions to stimulate the economy and to ward off the widely anticipated postwar recession. In the five years ended Dec. 31, 1950, total assets expanded from about \$7,300,000,000 to \$9,400,000,000, almost all of the increase being in Canadian assets.

It was not until the outbreak of the Korean war in June 1950 that the fear of inflation, arising from the heavy demands on Canadian resources, led to the adoption of restraining measures. Since then the banks have experienced substantial changes in their credit-granting capacity, as the country's official monetary policy was adapted to meet changes in business conditions. Alternating periods of ease and restraint have been marked by periods of rapidly rising bank assets followed by levelling-off phases.

The Korean boom of 1950-51 was followed, after only a short pause, by the investment boom of 1953-54. Recession in 1954-55 was accompanied by an easy monetary policy, during which the banks built up their liquid assets in the form of government bonds. Then a second and greater investment boom got under way in late 1955, which carried the Canadian economy and the banking system into another period when resources were strained to the limit. At this time, new measures of restraint were introduced into the Canadian banking system by the monetary authorities, including an agreed secondary reserve ratio of 7 p.c. in addition to the cash reserves of 8 p.c. already prescribed in the Bank Act Revision of 1954. A further agreement with the Bank of Canada was aimed at restraining term loans for capital purposes* and in 1956 bank loans to instalment finance companies were also put under some restraint. The boom of 1955-57 was followed by a mild recession in 1957-58, moderate recovery in 1958-59, slackening in 1960 and recovery again in 1961-62. In this period the banks have not regained the liquidity that characterized earlier postwar recessions, and there has been a growing need to husband resources carefully for the various and growing alternative outlets which developed as the result of economic growth, and of the efforts of both the Federal Government and the banks themselves to provide new uses for bank credit.

One of the first government measures was the Farm Improvement Loans Act of 1944, under which the chartered banks were authorized to make loans to farmers for the purchase of equipment and livestock and for making various improvements to their farm buildings and facilities. These loans are often for sizable amounts (an average about \$1,500) and the terms have been gradually extended to a maximum sum of \$7,500 outstanding to any one borrower with a maximum period of ten years (four years for implements). The banks are guaranteed against loss up to 10 p.c. of their loans made during the three-year "lending periods", up to a maximum total of loans by all banks. This total is \$400,000,000 for the lending period to end in mid-1965. By the end of 1962 the total amount of loans made under this Act was more than \$1,240,000,000 (see also pp. 419-420).

The 1954 Revision of the Bank Act introduced a major change in banking practice by enabling the banks to acquire mortgages issued under the National Housing Act. About 35 p.c. of all NHA mortgage loans in the years 1954-59 were made by the chartered banks, but at the end of 1959 the NHA interest rate was raised to 6½ p.c. and the banks withdrew from this field of lending. Notwithstanding this, by Dec. 31, 1962 they held

* Such loans were almost entirely a postwar innovation in Canadian lending practice, and had increased markedly during the easy-money period of 1954-55. Since 1956, term lending has generally been confined within narrower limits, although it is still practised when conditions permit.

some \$920,000,000 in NHA mortgages, representing about 5 p.c. of total assets. Another change affecting housing in the 1954 Revision enabled the banks to make Home Improvement Loans under a guarantee system rather similar to the one developed for Farm Improvement Loans. By the end of 1962, Home Improvement Loans amounting to \$275,000,000 had been approved and the banks had about \$70,000,000 of such loans on their books.

In November 1960, the Small Businesses Loans Act was passed guaranteeing, under terms to the banks similar to those of the Farm Improvement Loans Act, certain types of bank loan to small businesses for the purposes of making capital improvements to premises and equipment. This provides for loans that do not fall within the usual scope of bank lending to small business, by reason of the term nature of the loan, together with the lack of collateral resources of the borrower. Of course, chartered banks make loans to small businesses for a great variety of purposes, including many of a medium-term character; indeed, the working capital loan to the small-size or medium-size industry or commercial enterprise is the traditional stock-in-trade business of the chartered banks.

In April 1961, the charter of the Export Finance Corporation of Canada Limited, which had been incorporated by special Act of Parliament in June 1959 for private interests, was acquired by the chartered banks. The principal purpose of the Corporation is to assist in the medium-term (one to five years) financing of exports which have been insured by the Export Credit Insurance Corporation, a Crown company.

Still another area of lending which has expanded greatly in recent years is that of consumer credit. While the banks have always made some personal loans, they have recently moved aggressively into the field of lending to the general public for the purchase of automobiles, consumer durables and debt consolidation. Following the 1954 Bank Act Revision, and partly as a result of the change then made which enabled the banks to take chattel mortgage security, some banks have developed extensive consumer credit divisions. Personal loans made by the banks, other than those secured by stocks and bonds and Home Improvement Loans, mounted from \$420,000,000 at the end of 1957 to \$1,330,000,000 outstanding at June 30, 1963.

Outside of Canada, the Canadian banks have continued to expand their branch systems in the Caribbean area, although the two Canadian banks operating in Cuba have found it necessary to withdraw. Elsewhere abroad, the banks have expanded their representation in South America and in Europe. In recent years the growth of an international money market, following the economic recovery in Europe and the restoration of confidence in the stability of the Western economies and their currencies, has led to large movements of Western capital from one centre to another. The Canadian banks have participated extensively in this international money market, mainly through New York and London where most of them maintain large offices.

The postwar growth in bank assets has been accompanied by a substantial increase in total earnings. Earnings per share of capital employed did not increase to the same extent, however, as the banks found it necessary to raise new funds from time to time after 1950 in order to maintain an appropriate relationship between their shareholders' capital and the rapidly rising level of risk assets. The banks have been among the largest issuers of new share capital to Canadians in the past quarter-century.

Subsection 1.—Statistics of Chartered Banks

Branches of Chartered Banks.—Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from

34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—The Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amalgamation in 1955 of The Bank of Toronto and The Dominion Bank as The Toronto-Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 have reduced this number to eight. The number of branches of chartered banks in each province periodically from 1868 is given in Table 8.

8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1962

NOTE.—Figures for 1920 and subsequent years include sub-agencies in Canada receiving deposits for the banks employing them; there were 768 such sub-agencies at Dec. 31, 1962.

Province or Territory	1868	1902	1905	1920	1926	1930	1940	1943	1946	1950	1960	1961	1962
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	—	—	—	—	—	—	—	—	—	39	71	76	81
Prince Edward Island.....	—	9	10	41	28	28	25	23	23	23	27	27	27
Nova Scotia.....	5	89	101	169	134	138	134	126	127	144	173	176	178
New Brunswick.....	4	35	49	121	101	102	97	93	96	100	113	117	118
Quebec.....	12	137	196	1,150	1,072	1,183	1,083	1,041	1,067	1,164	1,427	1,454	1,439
Ontario.....	100	349	549	1,586	1,326	1,409	1,208	1,092	1,117	1,257	1,785	1,869	1,916
Manitoba.....	—	52	95	349	224	239	162	148	151	165	234	246	248
Saskatchewan.....	—	—	—	591	427	447	233	213	226	238	296	301	299
Alberta.....	—	30	87	424	269	304	172	163	190	246	394	409	417
British Columbia.....	—	46	55	242	186	229	192	189	216	294	514	534	545
Yukon and N.W.T.....	—	—	3	3	3	4	5	5	6	9	17	15	14
Canada.....	123	747	1,145	4,676	3,770	4,083	3,311	3,084	3,219	3,679	5,051	5,224	5,332

9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1962

NOTE.—This table includes 768 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	22	2	25	17	171	331
The Bank of Nova Scotia.....	31	8	51	40	54	259
Banque Canadienne Nationale.....	—	—	—	—	578	19
Banque Provinciale du Canada.....	—	3	—	18	315	23
Canadian Imperial Bank of Commerce.....	9	8	25	15	156	566
The Mercantile Bank of Canada.....	—	—	—	—	1	1
The Royal Bank of Canada.....	19	5	74	23	152	369
The Toronto-Dominion Bank.....	—	1	3	5	62	348
Totals.....	81	27	178	118	1,489	1,916
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	50	57	97	124	4	900
The Bank of Nova Scotia.....	19	31	50	69	—	612
Banque Canadienne Nationale.....	4	—	—	—	—	601
Banque Provinciale du Canada.....	—	—	—	—	—	359
Canadian Imperial Bank of Commerce.....	65	87	130	181	7	1,249
The Mercantile Bank of Canada.....	—	—	—	1	—	3
The Royal Bank of Canada.....	72	86	88	112	3	1,003
The Toronto-Dominion Bank.....	38	38	52	58	—	605
Totals.....	248	299	417	545	14	5,332

10.—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1962

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 24 in 1962.

Bank and Location	Number	Bank and Location	Number	Bank and Location	Number
Bank of Montreal—		Canadian Imperial Bank of Commerce—		The Royal Bank—concl.	
Britain.....	2	Britain.....	2	Haiti.....	1
United States.....	2	British West Indies.....	11	Dominican Republic.....	8
France.....	3	United States.....	5	France.....	1
Germany.....	4			The Toronto-Dominion Bank—	
The Bank of Nova Scotia—		The Royal Bank of Canada—		Britain.....	2
Britain.....	2	Britain.....	2	United States.....	1
British West Indies.....	27	British West Indies.....	27	Banque Canadienne Nationale—	
Dominican Republic.....	2	United States.....	1	France.....	1
United States.....	1	Puerto Rico.....	5		
Puerto Rico.....	3	Central and South America.....	25	Total.....	140
Trinidad.....	2				

Financial Statistics of the Chartered Banks.—The classification of chartered bank assets and liabilities was revised by the Bank of Canada Act 1954, so that the statistical series given in the following tables begins with that year. Month-end data are available from Dec. 31, 1954 to date in the Bank of Canada *Statistical Summary*.

11.—Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1954-62

(Millions of dollars)

As at Dec. 31—	ASSETS							
	Bank of Canada Deposits and Notes	Canadian Day-to- Day Loans	Treasury Bills	Govern- ment of Canada Direct and Guaranteed Bonds	Other Canadian Securities, Insured Residential Mortgages and Loans in Canada	Canadian Dollar Items in Transit (net)	Foreign Cash Items, Securities and Loans	Total Assets ¹
1954.....	791	68	360	2,953	4,963	827	1,142	11,433
1955.....	840	81	427	2,632	6,207	1,002	1,127	12,702
1956.....	882	74	740	1,675	6,820	1,330	1,486	13,428
1957.....	866	210	805	1,835	6,953	1,151	1,970	14,244
1958.....	1,001	123	950	2,562	7,365	1,224	2,165	15,840
1959.....	953	101	974	1,827	8,172	919	2,393	15,835
1960.....	992	172	967	2,088	8,510	884	2,725	16,917
1961.....	1,096	215	1,157	2,639	8,886	981	3,510	19,153
1962.....	1,162	293	1,127	2,241	9,737	1,010	3,876	20,273
LIABILITIES								
Canadian Dollar Deposits						Foreign Currency Deposits	Share- holders' Equity	Total Liabilities ¹
Govern- ment of Canada	Notice		All Other	Total				
	Personal Savings	Other Notice						
1954.....	176	5,218	397	3,891	9,683	1,030	521	11,433
1955.....	517	5,633	464	4,234	10,848	1,056	567	12,702
1956.....	246	6,007	444	4,465	11,162	1,369	653	13,428
1957.....	423	6,108	548	4,328	11,407	1,827	732	14,244
1958.....	319	6,844	618	4,909	12,690	2,077	813	15,840
1959.....	404	6,900	558	4,418	12,279	2,372	926	15,835
1960.....	510	7,215	576	4,621	12,921	2,654	1,004	16,917
1961.....	588	7,618	929	5,051	14,186	3,488	1,071	19,153
1962.....	564	7,932	997	5,205	14,699	3,958	1,097	20,273

¹ Includes other items not specified.

12.—Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1960-62

Assets and Liabilities	1960	1961	1962
	\$'000	\$'000	\$'000
Assets—			
Gold and coin in Canada.....	39,184	30,980	38,311
Gold and coin outside Canada.....	1,032	1,085	1,117
Notes of and deposits with Bank of Canada.....	992,426	1,096,060	1,162,415
Government and bank notes other than Canadian.....	43,931	46,650	46,537
Deposits with other banks in Canadian currency.....	4,842	9,683	8,879
Deposits with other banks in currencies other than Canadian.....	531,516	1,007,270	1,204,006
Cheques and other items in transit (net).....	832,874	844,782	867,398
Government of Canada treasury bills.....	967,209	1,156,888	1,126,584
Other Government of Canada direct and guaranteed securities maturing within two years, not exceeding market value.....	615,288	1,088,500	753,552
Government of Canada direct and guaranteed securities maturing after two years, not exceeding market value.....	1,472,389	1,550,743	1,487,313
Canadian provincial government direct and guaranteed securities, not exceeding market value.....	323,819	351,980	407,355
Canadian municipal and school corporation securities, not exceeding market value.....	207,962	231,264	249,943
Other Canadian securities, not exceeding market value.....	473,009	470,319	457,196
Securities other than Canadian, not exceeding market value.....	556,838	672,745	705,238
Mortgages and hypothecs insured under the National Housing Act 1954, less provision for estimated loss.....	970,592	952,671	921,112
Call and short loans in Canada to brokers and investment dealers, secured	310,208	344,897	481,998
Call and short loans outside Canada to brokers and investment dealers, secured.....	814,479	843,833	683,678
Loans to Canadian provincial governments.....	127,726	45,450	28,937
Loans to Canadian municipalities and school corporations, less provision for estimated loss.....	216,922	247,172	243,739
Other current loans in Canada, less provision for estimated loss.....	6,050,474	6,455,888	7,237,913
Other current loans outside Canada, less provision for estimated loss.....	813,754	1,068,744	1,365,984
Non-current loans, less provision for estimated loss.....	1,425	1,423	1,424
Bank premises at cost, less amounts written off.....	233,760	254,255	276,763
Shares of and loans to corporations controlled by the bank.....	51,443	52,979	53,675
Customers' liability under acceptances, guarantees and letters of credit as per contra.....	257,220	323,086	456,706
Other assets.....	6,774	4,137	4,935
Totals, Assets.....	16,917,096	19,153,484	20,272,708
Liabilities—			
Deposits by Government of Canada in Canadian currency.....	509,892	587,955	563,616
Deposits by Canadian provincial governments in Canadian currency.....	118,836	134,313	155,293
Deposits by other banks in Canadian currency.....	200,540	216,095	171,172
Deposits by other banks in currencies other than Canadian.....	646,881	702,518	693,759
Personal savings deposits payable after notice, in Canada, in Canadian currency.....	7,214,692	7,618,100	7,932,383
Other deposits payable after notice, in Canadian currency.....	575,861	928,971	997,463
Other deposits payable on demand, in Canadian currency.....	4,301,354	4,700,545	4,878,869
Other deposits in currencies other than Canadian.....	2,007,443	2,785,945	3,264,074
Acceptances, guarantees and letters of credit.....	257,220	323,086	456,706
Other liabilities.....	80,740	84,918	62,450
Capital paid up.....	265,564	275,366	276,957
Reserve account.....	730,154	786,791	812,070
Undivided profits at latest fiscal year-end.....	7,919	8,881	7,896
Totals, Liabilities.....	16,917,096	19,153,484	20,272,708

13.—Canadian Cash Reserves, 1953-62

NOTE.—For periods prior to July 1954 all figures are daily averages; from July 1954, in accordance with the Bank Act 1954, Bank of Canada deposits are averages of the juridical days in the month shown while Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities ¹	Average Cash Reserve Ratio ²
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1953.....	627	256	883	8,624	10.2
1954—January to June.....	634	260	894	8,820	10.1
1954—July to December.....	525	286	811	9,097	8.9
1955.....	541	293	834	9,915	8.4
1956.....	548	325	873	10,527	8.3
1957.....	535	335	870	10,601	8.2
1958.....	607	336	943	11,452	8.2
1959.....	648	351	999	12,187	8.2
1960.....	625	360	985	12,052	8.2
1961.....	673	367	1,040	12,804	8.1
1962.....	748	376	1,124	13,812	8.1

¹ From July 1954 the figures are not adjusted for items in transit and are not strictly comparable with the figures for earlier periods. ² Prior to July 1, 1954, the statutory minimum requirement was 5 p.c. for each day; since that date it has been a monthly average of 8 p.c.

14.—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Sept. 30, 1961 and 1962

Deposit Accounts of the Public of—	1961			1962		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
Less than \$100.....	5,902,275	1,175,674	7,077,949	6,214,773	1,353,989	7,568,762
\$100 or over but less than \$1,000.....	3,218,097	835,455	4,053,552	3,334,923	948,452	4,283,375
\$1,000 or over but less than \$10,000.....	1,655,959	345,564	2,001,523	1,737,532	378,535	2,116,067
\$10,000 or over but less than \$100,000.....	82,981	57,827	140,808	90,676	62,362	153,038
\$100,000 or over.....	1,125	6,413	7,538	899	6,252	7,151
Totals, Deposits.....	10,860,437	2,420,933	13,281,370	11,378,803	2,749,590	14,128,393

15.—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1960-62

Class of Loan	1960	1961	1962
	\$'000,000	\$'000,000	\$'000,000
General Loans—			
Personal.....	1,199.2	1,431.0	1,624.4
To individuals, fully secured by marketable bonds and stocks.....	886.4	535.6	578.0
Home improvement loans.....	66.0	65.7	69.8
To individuals, not elsewhere classified.....	856.8	1,029.7	1,182.6
Farmers—			
Farm Improvement Loans Act.....	178.1	194.3	212.6
Other farm loans.....	241.5	290.7	343.4
Industry.....	1,241.0	1,369.0	1,470.6
Chemical and rubber products.....	49.2	60.0	59.8
Electrical apparatus and supplies.....	60.9	67.3	79.9
Foods, beverages and tobacco.....	229.3	245.0	276.5
Forest products.....	179.7	185.7	195.5
Furniture.....	24.4	28.0	31.0
Iron and steel products.....	197.7	206.0	220.9
Mining and mine products.....	85.9	101.3	105.6
Petroleum and products.....	116.4	102.6	111.3
Textiles, leather and clothing.....	161.0	170.4	195.3
Transportation equipment.....	62.2	111.3	88.3
Other products.....	74.2	103.3	111.5

**15.—Classification of Chartered Bank Loans in Canadian Currency, as at
Dec. 31, 1960-62—concluded**

Class of Loan	1960	1961	1962
	\$'000,000	\$'000,000	\$'000,000
General Loans—concluded			
Merchandisers.....	858.4	888.6	987.4
Construction contractors.....	309.0	315.6	364.4
Public utilities, transportation and communications.....	216.7	165.4	224.9
Other business.....	594.5	784.3	991.1
Religious, educational, health and welfare institutions.....	193.8	208.3	226.5
Totals, General Loans.....	5,032.1	5,647.2	6,445.3
Other Loans—			
Provincial governments.....	127.7	45.5	28.9
Municipal governments and school districts.....	216.9	247.2	243.7
Stockbrokers.....	64.9	64.5	65.2
Investment dealers.....	73.0	65.1	124.1
Loans to finance the purchase of Canada Savings Bonds.....	185.9	189.2	199.6
Grain dealers and exporters.....	462.9	348.0	310.8
Instalment and other finance companies.....	371.0	272.9	283.7
Totals, Other Loans.....	1,502.3	1,232.3	1,256.0
Grand Totals, Loans in Canadian Currency.....	6,534.5	6,879.5	7,701.3

**16.—Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity,
Fiscal Years Ended in 1960-62**

NOTE.—The financial years of six banks end on Oct. 31, two on Nov. 30 and one on Sept. 30.
(Millions of dollars)

Item	1960	1961	1962
Current Operating Earnings—			
Interest and discount on loans.....	525.5	540.5	611.5
Interest, dividends and trading profits on securities ¹	182.3	196.6	211.3
Exchange, commission, service charges and other current operating earnings.....	134.6	143.1	154.0
Totals, Current Operating Earnings.....	842.4	880.2	976.8
Current Operating Expenses—²			
Interest on deposits.....	270.9	290.8	355.3
Remuneration to employees.....	229.7	243.8	260.9
Contributions to pension funds.....	13.2	13.3	13.6
Provision for depreciation of bank premises.....	18.4	19.6	22.4
Other current operating expenses ³	113.7	122.8	135.4
Totals, Current Operating Expenses².....	645.9	690.3	787.6
Net current operating earnings².....	196.5	189.9	189.2
Capital profits and non-recurring items ⁴	3.7	1.5	2.0
Less provision for losses and addition to inner reserves, net ⁵	25.2	—10.6	24.7
Less provision for income taxes ⁶	90.7	101.7	84.7
Leaving for dividends and shareholders' equity.....	84.3	100.3	81.8
Dividends to shareholders.....	54.0	57.8	60.3
Additions to shareholders' equity.....	30.3	42.5	21.5
ADDITIONS TO SHAREHOLDERS' EQUITY			
Undivided Profits—			
From operating earnings, net after transfers to rest account.....	—2.2	1.0	—1.0
Rest Account—			
From operating earnings and undivided profits.....	16.8	14.5	19.6
From retransfers from inner reserves.....	15.7	27.1	3.0
From premium on new shares.....	36.2	14.6	3.5
Capital Paid Up—			
From issue of new shares.....	11.5	9.4	2.1
NET ADDITIONS TO SHAREHOLDERS' EQUITY.....	78.0	66.6	27.2

¹ Realized profits and losses on disposal of securities are included in operating earnings. ² Before provision for income taxes, losses, and transfers to inner reserves. ³ Includes taxes other than income taxes. ⁴ Profits and losses on sale of fixed assets and adjustments relating to prior years. ⁵ After amounts retransferred to rest account. ⁶ Includes income taxes on taxable portion of additions to and amounts retransferred from inner reserves, and foreign income taxes.

Cheque Payments.—A monthly record of the value of cheques charged to customer accounts at all chartered bank offices in 35 major clearing-house centres of Canada is available from 1924. Except for a minor setback in 1938, the value of cheques cashed shows a continuously upward trend from 1932, the low point of the depression years. The total of \$325,564,498 in 1962 was a record, 953 p.c. greater than in 1938. The advance was well distributed throughout Canada's five economic areas. British Columbia showed the largest gain with an increase of 1,092 p.c. Ontario was second with an advance of 985 p.c., followed by the Prairie Provinces with 956 p.c., the Atlantic Provinces with 918 p.c. and Quebec with 882 p.c.

Value of cheques cashed in 34 of the original 35 centres was higher in 1962 than in 1961. Payments in Toronto showed a gain of 11.1 p.c. and Montreal rose by 12.2 p.c. In the western regions, Winnipeg showed little change and Vancouver advanced by 10.3 p.c.

17.—Cheques Cashed at 35 Clearing-House Centres, 1958-62

Clearing-House Centre	1958	1959	1960	1961	1962
	\$'000	\$'000	\$'000	\$'000	\$'000
Atlantic Provinces	4,438,573	5,119,612	5,499,101	5,876,687	6,509,096
Halifax.....	1,952,996	2,240,973	2,470,454	2,765,782	3,101,706
Moncton.....	644,873	687,497	703,300	725,885	771,911
Saint John.....	974,038	1,240,454	1,292,907	1,282,369	1,352,215
St. John's.....	866,666	950,688	1,032,440	1,102,650	1,263,264
Quebec	63,318,152	70,466,038	80,114,230	87,213,839	97,851,664
Montreal.....	57,779,114	64,370,687	73,203,832	78,593,811	88,211,663
Quebec.....	4,994,969	5,515,388	6,285,281	7,912,527	8,818,728
Sherbrooke.....	544,069	579,963	625,117	707,501	821,273
Ontario	102,798,608	117,852,356	125,319,946	134,719,363	149,812,492
Brantford.....	611,026	692,885	688,254	693,833	791,851
Chatham.....	639,883	618,778	655,467	654,195	665,473
Cornwall.....	400,905	430,320	406,526	455,088	476,467
Fort William.....	458,694	483,014	454,425	483,450	500,329
Hamilton.....	4,681,253	5,784,746	5,730,223	5,988,206	6,709,167
Kingston.....	499,922	530,388	520,401	561,700	627,367
Kitchener.....	1,050,153	1,212,701	1,268,458	1,321,571	1,580,719
London.....	2,756,333	3,248,221	3,438,475	3,728,758	4,184,759
Ottawa.....	4,823,537	5,441,744 ¹	5,428,618 ¹	5,923,469 ¹	6,765,125
Peterborough.....	534,561	597,133	588,320	566,260	615,616
St. Catharines.....	800,629	847,322	861,905	959,735	1,089,736
Sarnia.....	589,935	610,219	631,965	701,576	761,867
Sudbury.....	613,037	646,385	650,352	711,292	792,746
Toronto.....	82,217,905	94,286,069	101,652,499	109,570,868	121,733,430
Windsor.....	2,120,835	2,422,431	2,344,058	2,399,362	2,517,840
Prairie Provinces	34,490,157	37,804,428	40,667,168	45,540,898	48,301,500
Brandon.....	229,039	247,763	255,007	269,028	271,465
Calgary.....	7,646,109	8,528,838	8,773,941	10,326,214	11,415,990
Edmonton.....	5,149,339	5,823,946	5,975,975	6,072,584	7,550,912
Lethbridge.....	441,664	498,787	488,953	501,226	580,065
Medicine Hat.....	201,480	226,498	225,390	243,630	295,133
Moose Jaw.....	392,210	394,040	407,835	379,010	422,336
Prince Albert.....	204,351	229,736	235,304	247,306	253,268
Regina.....	3,622,192	3,859,211	4,377,349	4,869,831	5,326,695
Saskatoon.....	971,924	1,085,023	1,101,592	1,170,588	1,265,700
Winnipeg.....	15,631,849	16,910,586	18,825,822	20,861,681	20,919,929
British Columbia	16,244,464	17,626,917	18,018,609	20,433,555	23,089,746
New Westminster.....	824,007	925,926	863,876	²	²
Vancouver.....	13,143,566	14,230,065	14,653,833	17,766,910	19,602,381
Victoria.....	2,276,891	2,470,926	2,500,900	2,666,645	3,487,365
Totals	221,389,954	248,869,351	269,619,054	293,784,342	325,564,498

¹ Excludes some debits reported in preceding years.

² Included with Vancouver.

Subsection 2.—Government and Other Banking Institutions

There are three distinct types of savings banks in Canada in addition to the savings departments of the chartered banks and of trust and loan companies: (1) the Post Office Savings Bank, in which deposits are a direct obligation of the Government of Canada; (2) Provincial Government savings banking institutions in Ontario and Alberta, where the depositor becomes a direct creditor of the province; and (3) two important savings banks in the Province of Quebec—the Montreal City and District Savings Bank and La Banque d'Économie de Québec—established under federal legislation and reporting monthly to the federal Department of Finance. In addition, co-operative credit unions encourage savings among low-income classes and extend small loans to their members.

Post Office Savings Bank.—The Post Office Savings Bank was established under the Post Office Act of 1867 (SC 1867, c. 10) to "enlarge the facilities now available for the deposit of small savings, to make the Post Office available for that purpose, and to give the direct security of the nation to every depositor for repayment of all money deposited by him together with the interest due thereon". Branches of the Government of Canada's Savings Bank under the Department of Finance were gradually amalgamated with this Bank over a period of 50 years and the amalgamation was completed in March 1929. Summary financial statistics for the years ended Mar. 31, 1960-63 follow. Figures back to 1868 are available in previous editions of the Year Book.

<i>Item</i>	<i>1960</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>
	\$	\$	\$	\$
Deposits and interest.....	8,010,334	6,898,062	6,466,358	5,714,720
Deposits.....	7,235,391	6,199,480	5,790,429	5,072,613
Interest on deposits.....	774,943	698,642	675,929	642,107
Withdrawals.....	12,793,511	7,757,737	7,614,025	7,199,360
Balance on deposit.....	29,372,461	28,512,786	27,365,119	25,880,479

Provincial Government Savings Banks.—Institutions for the deposit of savings are operated by the Provincial Governments of Ontario and Alberta.

Ontario.—The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 3 p.c. per annum, compounded half-yearly, is paid on accounts, and deposits are repayable on demand. Total deposits at Mar. 31, 1963 were \$77,070,000 and the number of depositors was approximately 95,000. Twenty-one branches were in operation throughout the province.

Alberta.—Savings deposits are accepted at 56 Provincial Treasury Branches throughout Alberta. The total of these deposits at Mar. 31, 1962 was \$37,104,790, of which \$34,298,016 was payable on demand bearing interest at 2½ p.c. per annum, and \$2,806,774 in term savings for terms ranging from three months to five years bearing interest at rates from 2½ p.c. to 4 p.c. per annum depending on the term.

Authority was also given for the issue by the Provincial Treasury Department of savings certificates after Jan. 1, 1960 on the following basis: demand certificates bearing interest at 2½ p.c. per annum in denominations of \$10 and up, and five-year certificates bearing interest at 4½ p.c. per annum in denominations of \$25 and up. Nine of these certificates were outstanding as at Mar. 31, 1962.

Quebec Savings Banks.—The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Mar. 31, 1963, a paid-up capital and reserve of \$11,000,000, savings deposits of \$287,930,422 and total liabilities of \$308,153,084. Total assets amounted to \$308,153,084, including \$137,729,318 of federal, provincial, municipal and other securities. La Banque d'Économie de Québec, founded in

1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, had, at Mar. 31, 1963, savings deposits of \$47,629,683 and a paid-up capital and reserve of \$3,500,000. Total liabilities amounted to \$54,227,442 and total assets to a like amount.

Credit Unions.—Credit unions are savings and loan associations operated by people with a common bond. The bond of association may be in a parish, club, lodge or labour union, that of employment in a plant, industry or department, or that of residence in a rural or a well-defined urban community. Figures showing the growing importance of credit unions as savings and loan associations in Canada are given in Table 18. During the ten-year period 1952-61 the number of credit unions chartered increased by 40 p.c.; the number of members in reporting organizations by 117 p.c.; and the assets of reporting organizations by 255 p.c. Membership reached 2,740,251 in 1961. Quebec holds the lead in the Canadian credit union movement, having more than half of the total membership and about 60 p.c. of the total assets of all credit unions in Canada in 1961.

Occupational credit unions are growing at a faster rate than those of other types; they accounted for 33 p.c. of the number of credit unions in Canada in 1961, about the same percentage as rural credit unions. In Ontario they represented 60 p.c. of the provincial total in 1961. Occupational credit unions also lead in British Columbia. In Alberta and Manitoba, their number was about the same as that of rural credit unions. In the Atlantic Provinces, Quebec and Saskatchewan the credit unions are predominantly rural.

Savings, which include shares and deposits, reached \$1,382,000,000 in 1961, an increase of 15 p.c. over 1960; the average saving per credit union member was \$504. Loans made to members from these savings amounted to \$578,663,000 at interest rates of 1 p.c. per month or less on the unpaid balance.

There were 27 central credit unions in 1961. The main function of the central credit union is to act as a credit union for credit unions, mainly by accepting deposits from them and making loans to them. The centrals facilitate the flow of funds to credit unions that cannot meet the demand for local loans. Some of these central credit unions admit co-operative associations to membership. The centrals had assets of \$207,975,000 in 1961, an increase of 18 p.c. over 1960; they made loans amounting to \$84,741,000 to member credit unions and co-operatives. The Canadian Co-operative Credit Society serves as a central credit union for provincial centrals and co-operatives all across Canada. In 1961, membership in this national organization included four provincial centrals, four commercial co-operatives, The Co-operative Life Insurance Company and The Co-operative Fire and Casualty Insurance Company.

18.—Credit Unions in Canada, 1952-61

Year	Credit Unions Chartered	Credit Unions Reporting	Members ¹	Assets ¹
	No.	No.	No.	\$'000
1952.....	3,335	3,080	1,260,435	424,400
1953.....	3,606	3,413	1,434,270	489,266
1954.....	3,920	3,690	1,560,715	552,363
1955.....	4,100	3,899	1,731,328	652,554
1956.....	4,253	3,973	1,870,227	761,256
1957.....	4,389	4,044	2,059,835	852,219
1958.....	4,485	4,166	2,187,494	1,009,363
1959.....	4,570	4,202	2,360,047	1,157,995
1960.....	4,608	4,345	2,553,951	1,314,290
1961.....	4,697	4,348	2,740,251	1,506,167

¹ Reporting organizations only.

19.—Summary Statistics of Credit Unions, by Province, 1961

Province	Credit Unions Chartered	Credit Unions Reporting	Members	Assets	Shares	Deposits	Loans to Members	Total Loans since Inception
	No.	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	64	48	3,178	451	371	23	360	4,923
Prince Edward Island.....	57	44	9,265	1,741	1,430	96	753	11,629
Nova Scotia.....	210	198	62,881	17,044	14,696	483	11,369	99,709
New Brunswick.....	161	161	83,526	18,328	16,251	251	8,103	80,139
Quebec ¹	1,491	1,468	1,458,093	886,503	93,481	740,665	217,832	1,820,292 ²
Desjardins.....	1,239	1,237	1,294,082	780,554	62,637	684,551	178,929	1,619,591
Quebec League.....	255	204	81,000	38,674	28,949	5,752	17,625 ²	101,805 ²
Montreal Federation.....	22	22	65,963	58,411	4,076	50,236	16,343	99,396
Cendel Federation.....	4	4	16,798	8,603	7,706	—	5,842	—
Ontario.....	1,535	1,315	570,540	266,908	183,583	47,283	165,764	1,019,942
Manitoba.....	256	248	101,162	50,509	38,190	6,319	34,733	202,440
Saskatchewan.....	282	280	156,492	110,664	84,852	18,196	51,285	310,959
Alberta.....	314	284	86,561	35,184	29,120	1,822	23,926	146,997
British Columbia.....	327	302	208,553	118,835	100,282	5,092	64,538	442,380
Totals, 1961.....	4,697	4,348	2,740,251	1,596,167	562,256	820,220	578,663	4,139,590²
1960².....	4,608	4,345	2,553,951	1,314,290	483,575	723,803	481,192	3,566,096²

¹ Includes credit unions not in Federations or League.
not in Federations or League.

² Estimated.

² Excludes Cendel Federation and credit unions

Section 4.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870, was defined as 15/73 of the British gold sovereign.* That is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under \$2 per thousand.

On the outbreak of World War I, Canada and Britain suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at \$4.76 in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of Britain, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

From 1915 to the end of 1917, fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919, the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as \$3.18.

* The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After Britain resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930, when it went to a small premium in New York, the dollar remained below parity until Britain abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933 both currencies had reached a premium in New York. Meanwhile, in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved toward resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at \$35 per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, Britain and other sterling countries introduced foreign exchange control involving fixed buying and selling rates of \$4.02½ and \$4.03½, respectively, in terms of the United States dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control† in Canada and established fixed buying and selling rates of \$1.10 to \$1.11 for the U.S. dollar and \$4.43 to \$4.47 for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to \$1.10½ and \$4.45, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of \$1.00 to \$1.00½ and for sterling \$4.02 to \$4.04. These rates continued in effect until Sept. 19, 1949 when, following a 30.5-p.c. reduction by Britain in the value of sterling to \$2.80 U.S. (an action which was paralleled in varying degrees by numerous other currencies), Canada returned to the former official rates of \$1.10 and \$1.10½ for United States funds. Sterling was quoted at \$3.07½ and \$3.08½ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until Dec. 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of 92½ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund and, in accordance

* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in the 1941 to 1952-53 editions of the Year Book.

with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1 p.c. on either side of the established par value.

The movements of the U.S. dollar in Canadian funds from January 1955 to October 1963 are shown in Table 20.

20.—Price of the United States Dollar in Canada, by Month, 1955-63

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.

(Canadian cents per U.S. dollar)

Month	1955	1956	1957	1958	1959	1960	1961	1962	1963
January.....	96.60	99.87	96.07	98.47	96.69	95.31	99.29	104.50	107.71
February.....	97.69	99.91	95.83	98.10	97.49	95.17	98.96	104.88	107.76
March.....	98.43	99.87	95.61	97.73	96.98	95.09	98.73	104.94	107.80
April.....	98.62	99.68	95.97	97.06	96.35	96.29	98.89	104.98	107.68
May.....	98.59	99.18	95.56	96.69	96.29	97.81	98.75	108.23	107.72
June.....	98.44	98.53	95.32	96.18	95.88	98.23	100.55	108.79	107.82
July.....	98.46	98.18	95.09	96.00	95.74	97.84	103.41	107.89	107.97
August.....	98.51	98.12	94.80	96.46	95.44	96.98	103.15	107.76	108.29
September.....	98.78	97.77	95.92	97.68	95.16	97.25	103.08	107.68	107.98
October.....	99.53	97.32	96.47	97.07	94.77	97.85	103.03	107.60	107.79
November.....	99.94	96.44	96.24	96.83	95.03	97.67	103.57	107.68	107.76
December.....	99.95	96.05	97.74	96.46	95.12	98.24	104.27	107.60	..
Annual Average.....	98.63	98.41	95.88	97.06	95.90	96.97	101.32	106.89	..

21.—Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1944-62

NOTE.—Holdings comprise gold, U.S. dollars and short-term securities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.

(Millions of U.S. dollars)

Year	Gold	U.S. Dollars	Total	Year	Gold	U.S. Dollars	Total
1944.....	293.9	608.3	902.2	1954.....	1,072.7	869.9	1,942.6
1945.....	353.9	1,154.1	1,508.0	1955.....	1,133.9	766.9	1,900.8
1946.....	536.0	708.9	1,244.9	1956.....	1,103.3	832.9	1,936.2
1947.....	286.6	215.1	501.7	1957.....	1,100.3	728.0	1,828.3
1948.....	401.3	596.5	997.8	1958.....	1,078.1	861.0	1,939.1
1949.....	486.4	630.7 ¹	1,117.1 ¹	1959.....	959.6 ²	909.6	1,869.2 ²
1950.....	580.0	1,161.5	1,741.5	1960.....	885.3	943.9	1,829.2
1951.....	841.7	936.9	1,778.6	1961.....	946.2	1,109.6	2,055.8
1952.....	885.0	975.2	1,860.2	1962.....	708.5	1,830.9	2,539.4 ³
1953.....	986.1	832.4	1,818.5				

¹ Does not include \$18,200,000 in U.S. funds borrowed in the U.S. in August 1949 by the Government of Canada and set aside for the purpose of retiring an equal amount of certain securities payable in U.S. dollars on Feb. 1, 1950.

² On Oct. 1, 1959, \$62,500,000 representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund.

³ Includes the proceeds of a drawing equivalent to U.S. \$300,000,000 which was made from the International Monetary Fund in June 1962 and which was outstanding at year-end.

PART II.—MISCELLANEOUS COMMERCIAL FINANCE

Section 1.—Loan and Trust Companies*

Canadian loan and trust companies, registered with either the federal or provincial governments, operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 as amended by SC 1953, c. 5, SC 1958, c. 35, and SC 1961, c. 51; and RSC 1952, c. 272 as amended by SC 1953, c. 10, SC 1958, c. 42, and SC 1961, c. 55, respectively) and corresponding provincial legislation. Although statistics of provincially registered companies are not collected in detail, it is estimated that more than 95 p.c. of the business of such

* Revised under the direction of the Superintendent of Insurance for Canada, Ottawa.

companies is represented in the figures of this Section, so that they may be accepted as fairly inclusive and representative of the volume of business transacted.

The principal function of loan companies is the lending of funds on first-mortgage security, the money thus made available for development purposes being secured mainly by the sale of debentures to the investing public and by savings department deposits. The extent of investments in mortgages by federal and provincial loan companies may be gauged by the following figures: total assets of such companies for the years 1960 and 1961 amounted to \$751,369,090 and \$771,995,209, respectively, which amounts include mortgage loans of \$583,982,535 and \$595,251,243, respectively; thus, the resulting percentages of mortgages to total assets for those years were approximately 78 p.c. and 77 p.c., respectively.

Trust companies act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of the estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stocks and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcy. Such companies receive deposits for investment but the investing and lending of such deposits and of actual trust funds are restricted by law. The assets of trust companies (not including estates, trust and agency funds, which cannot be regarded as assets in the same sense as company and guaranteed funds) increased from \$154,202,165 in 1928 to \$1,608,484,326 in 1961. In the former year the total of estates, trust and agency funds administered amounted to \$1,077,953,643 and in 1961 to \$8,118,543,169.

A summary of operations of provincial and federal loan and trust companies is given in Table 1. As a result of the nature of the operations of the latter companies, which are intimately connected with the matter of probate, the larger trust companies usually choose to operate under provincial charters. The statistics of Tables 2, 3 and 4 refer to those companies incorporated both by the Government of Canada and by the provinces. Included in the statistics of federal companies are data of loan and trust companies incorporated by Nova Scotia and brought by the laws of that province under the examination of the federal Department of Insurance, as well as data for trust companies in New Brunswick and Manitoba.

1.—Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1960 and 1961

Item	1960			1961		
	Provincial Companies	Federal Companies	Total	Provincial Companies	Federal Companies	Total
	\$	\$	\$	\$	\$	\$
Loan Companies—						
Assets (book values).....	290,728,768	460,640,322	751,369,090	205,483,633	566,511,576	771,995,209
Liabilities to the public.....	223,064,693	413,236,909	636,301,602	146,060,226	506,328,076	652,388,302
Capital paid up.....	24,045,050	18,727,117	42,772,167	23,158,009	20,410,770	43,568,779
Reserve and contingency funds....	30,824,333	27,997,648	58,821,981	29,986,605	38,914,179	68,900,784
Surplus.....	12,794,692	678,648	13,473,340	6,278,793	858,551	7,137,344
Total liabilities to shareholders....	67,664,075	47,403,413	115,067,488	59,423,407	60,183,500	119,606,907
Gross profits realized during year ¹	6,155,722	6,815,970	12,971,692	5,206,685	8,475,977	13,682,662
Trust Companies—						
Assets (book values)—						
Company funds.....	116,836,442	42,503,686	159,340,128	129,352,820	59,858,136	189,210,956
Guaranteed funds.....	820,656,210	325,792,913	1,146,449,123	899,871,495	519,401,875	1,419,273,370
Totals, Assets.....	937,492,652	368,296,599	1,305,789,251	1,029,224,315	579,260,011	1,608,484,326
Estates, trust, and agency funds....	6,143,921,379	1,246,508,258	7,390,429,637	6,170,097,541	1,948,445,628	8,118,543,169
Capital paid up.....	33,614,925	17,553,140	51,168,065	32,945,340	22,004,140	54,949,480
Reserve and contingency funds....	54,760,891	21,214,519	75,975,410	60,400,074	32,823,231	93,223,305
Surplus.....	8,233,876	1,268,791	9,502,667	7,494,702	1,901,965	9,396,667
Gross profits realized during year ¹	11,898,635	5,601,529	17,500,164	13,517,267	7,979,311	21,496,578

¹ Profits before income taxes.

2.—Assets and Liabilities of Loan Companies, 1957-61

Item	CHARTERED BY GOVERNMENT OF CANADA ¹				
	1957	1958	1959	1960	1961
	\$	\$	\$	\$	\$
Assets					
Real estate ²	8,176,745	8,503,266	9,568,209	9,995,987	11,315,716
Mortgage loans and agreements of sale.....	245,459,582	269,539,879	312,248,782	360,338,064	425,789,259
Collateral loans.....	249,551	238,477	1,654,320	295,504	1,434,676
Bonds and debentures.....	39,190,957	51,544,496	50,748,166	57,399,876	79,903,391
Stocks.....	15,907,174	17,894,334	18,437,649	17,841,834	29,313,096
Cash.....	8,578,259	7,382,089	11,596,706	8,782,834	9,881,139
Totals, Assets³.....	320,144,380	358,735,601	408,793,088	460,640,322	566,511,576
Liabilities					
Liabilities to Shareholders—					
Capital paid up.....	17,695,087	18,726,524	18,675,472	18,727,117	20,410,770
Reserves.....	20,527,887	24,020,837	25,605,974	27,997,648	38,914,179
Totals, Liabilities to Shareholders⁴.....	39,430,170	43,764,477	45,106,321	47,403,413	60,183,500
Liabilities to the Public—					
Debentures.....	169,507,160	183,237,073	242,286,755	277,599,798	322,937,934
Deposits.....	105,761,097	124,444,060	112,227,274	124,733,566	168,310,007
Totals, Liabilities to the Public⁵.....	280,238,094	314,971,124	363,686,767	413,236,909	506,328,076
Totals, Liabilities.....	319,668,264	358,735,601	408,793,088	460,640,322	566,511,576
CHARTERED BY PROVINCES ⁶					
	1957	1958	1959	1960	1961
	\$	\$	\$	\$	\$
Assets					
Real estate ²	3,438,381	3,086,620	2,593,080	2,424,620	2,694,255
Mortgage loans and agreements of sale.....	175,175,917	187,149,974	197,420,587	223,644,471	169,461,984
Collateral loans.....	3,381,018	2,938,213	2,892,144	2,974,674	1,448,931
Bonds and debentures.....	26,409,535	34,005,594	33,936,518	35,799,773	9,766,188
Stocks.....	6,700,522	7,707,552	11,128,378	12,100,803	12,550,584
Cash.....	8,723,799	6,549,746	7,685,644	4,472,163	5,342,941
Totals, Assets³.....	228,927,416	246,637,900	262,715,544	290,728,768	205,483,633
Liabilities					
Liabilities to Shareholders—					
Capital paid up.....	21,395,380	20,085,710	20,902,070	24,045,050	23,158,009
Reserves.....	38,896,098	39,933,681	41,683,880	30,824,333	29,986,605
Totals, Liabilities to Shareholders⁴.....	68,498,059	68,288,901	70,274,619	67,664,075	59,423,407
Liabilities to the Public—					
Debentures.....	73,586,634	81,935,674	87,454,173	99,559,183	119,196,291
Deposits.....	82,434,034	91,774,807	98,592,261	117,120,690	18,109,616
Totals, Liabilities to the Public⁵.....	160,429,357	178,348,999	192,440,925	223,064,693	146,060,226
Totals, Liabilities.....	228,927,416	246,637,900	262,715,544	290,728,768	205,483,633

¹ Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected by the federal Department of Insurance. ² Book value of real estate for company use and other real estate.

³ Includes interest due and accrued and other assets.

⁴ Includes surplus.

⁵ Includes other liabilities

⁶ Exclusive of Nova Scotia.

3.—Assets and Liabilities of Trust Companies, 1957-61

Item	CHARTERED BY GOVERNMENT OF CANADA ¹				
	1957	1958	1959	1960	1961
	\$	\$	\$	\$	\$
Assets					
Company Funds^{2,3}	38,843,072	36,551,294	39,702,594	42,503,686	59,858,136
Real estate ⁴	2,988,961	3,509,377	3,496,168	3,510,871	7,334,471
Mortgage loans and agreements of sale	9,514,144	8,678,270	8,609,888	7,914,553	9,398,702
Collateral loans	404,577	293,660	324,523	417,349	676,996
Bonds and debentures	15,743,144	14,235,122	16,567,028	18,411,140	25,475,554
Stocks	5,881,192	5,765,935	6,542,623	6,862,014	9,615,703
Cash	2,876,263	3,155,689	2,903,129	4,032,202	5,537,837
Guaranteed Funds^{2,3}	176,964,312	238,743,359	261,752,047	325,792,913	519,401,875
Mortgage loans and agreements of sale	95,833,151	122,379,881	147,003,172	178,921,263	278,153,089
Collateral loans	4,729,770	7,180,379	6,786,105	9,659,284	11,556,406
Bonds and debentures	66,029,880	99,188,148	96,526,399	124,867,826	210,620,896
Stocks	1,539,685	1,650,340	1,524,926	2,753,835	4,426,981
Cash	7,234,502	6,058,157	7,158,607	5,764,685 ⁵	9,583,905
Liabilities					
Company Funds⁵	38,583,249	36,551,294	39,702,594	42,503,686	59,858,136
Capital paid up	18,332,563	16,565,308	17,072,542	17,553,140	22,004,140
Reserves	13,099,813	16,385,119	18,832,621	21,214,519	32,823,231
Guaranteed Funds—Trust Deposits and Certificates	176,964,312	238,743,359	261,752,047	325,792,913	519,401,875
	CHARTERED BY PROVINCES ⁶				
	1957	1958	1959	1960	1961
	\$	\$	\$	\$	\$
Assets					
Company Funds^{2,3}	97,258,395	106,914,805	117,135,913	116,836,442	129,352,520
Real estate ⁴	11,735,804	15,173,335	16,810,602	12,960,356	14,186,725
Mortgage loans and agreements of sale	10,330,834	9,770,939	9,674,177	9,571,288	10,007,435
Collateral loans	12,145,388	12,896,627	14,546,216	12,803,895	16,277,588
Bonds and debentures	25,342,514	24,235,427	24,584,011	26,406,676	24,104,945
Stocks	29,161,353	31,922,199	37,574,200	40,189,275	48,001,166
Cash	3,222,485	6,673,663	6,928,724	6,465,350	7,245,667
Guaranteed Funds²	472,678,645	588,188,712	660,663,751	820,656,210	899,871,495
Mortgage loans and agreements of sale	159,294,108	202,195,999	243,457,590	277,110,007	329,404,454
Collateral loans	29,845,537	41,652,942	38,379,063	37,858,967	39,809,753
Bonds and debentures	253,111,774	301,913,159	325,946,836	443,027,864	481,645,708
Stocks	1,911,365	2,597,947	2,846,691	2,752,126	4,642,875
Cash	25,235,015	36,316,995	45,666,001	52,660,881	23,650,401
Liabilities					
Company Funds⁵	97,258,395	106,914,805	117,135,913	116,836,442	129,352,820
Capital paid up	31,600,360	31,724,725	31,847,000	33,614,925	32,945,340
Reserves	39,320,428	44,356,427	53,707,938	54,760,891	60,400,074
Guaranteed Funds—Trust Deposits and Certificates	472,678,645	588,188,712	660,663,751	820,656,210	899,871,495

¹ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the federal Department of Insurance.

² Includes other assets.

³ Includes interest due and accrued.

⁴ Book value of real estate for company use and other real estate.

⁵ Includes other company fund liabilities.

⁶ Chartered by all provinces except Nova Scotia, New Brunswick and Manitoba (see text, p. 1064).

4.—Estates, Trust and Agency Funds of Trust Companies, Chartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. 31, 1952-61

Year	Federal Companies ¹	Provincial Companies ²	Total	Year	Federal Companies ¹	Provincial Companies ²	Total
	\$	\$	\$		\$	\$	\$
1952.....	588,550,279	3,383,650,088	3,972,200,367	1957.....	886,560,559	4,695,817,867	5,582,378,426
1953.....	631,231,540	3,470,781,614	4,102,013,154	1958.....	990,078,160	5,328,920,074	6,318,998,234
1954.....	663,520,956	3,734,874,516	4,398,395,472	1959.....	1,127,767,607	5,774,745,226	6,902,512,833
1955.....	734,670,479	3,985,662,299	4,720,332,778	1960.....	1,246,508,258	6,143,921,379	7,390,429,637
1956.....	815,367,349	4,318,560,879	5,133,928,228	1961.....	1,948,445,628	6,170,097,541	8,118,543,169

¹ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. ² Excludes provincial companies of Nova Scotia, New Brunswick and Manitoba which are included with federal companies.

Section 2.—Licensed Small Loans Companies and Licensed Money-Lenders*

Licensed small loans companies and licensed money-lenders are subject to the provisions of the Small Loans Act (RSC 1952, c. 251, as amended by c. 46 of the Statutes of 1956) an enactment of the Parliament of Canada regulating personal loans not in excess of \$1,500 made on the security of promissory notes of borrowers. Most of these notes are additionally secured by endorsements or chattel mortgages. The Act permits, in the case of licensed lenders, maximum rates of cost of loan, including charges of every kind, of 2 p.c. per month on that portion of the unpaid balance of a loan not exceeding \$300, 1 p.c. per month on that portion of the balance exceeding \$300 but not exceeding \$1,000, and one half of 1 p.c. per month on any remainder of the balance exceeding \$1,000. The maximum rate permitted to be charged by an unlicensed lender is 1 p.c. per month. Prior to Jan. 1, 1957, the scope of the Act extended only to loans of \$500 and under and the maximum rate permitted to be charged by licensed lenders was 2 p.c. per month and by unlicensed lenders 12 p.c. per annum. The small loans companies—five in number—were incorporated by special Acts of the Parliament of Canada, the first such company commencing business in 1928. Money-lenders, of which there are 76, are made up of companies otherwise incorporated and include a few partnerships and individuals. Table 5 gives the combined financial experience of small loans companies and licensed money-lenders for the years 1958-61.

5.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1958-61

Assets and Liabilities	1958	1959	1960	1961
	\$	\$	\$	\$
Assets.....	408,581,861	489,458,577	549,397,569	589,671,958
Small loan balances.....	315,827,669	360,019,949	391,548,554	426,157,274
Balances, large loans and other contracts.....	81,597,731	117,019,123	143,809,201	149,610,423
Cash.....	5,334,230	5,422,060	7,136,432	6,114,919
Other.....	5,822,231	6,997,445	6,903,382	7,789,342
Liabilities.....	408,581,861	489,458,577	549,397,569	589,671,958
Borrowed money.....	326,274,370	398,296,116	446,112,043	477,639,594
Reserves for losses.....	8,454,003	9,536,367	10,966,543	11,603,200
Paid-up capital.....	26,620,278	36,106,703	39,495,327	42,375,438
Surplus paid in by shareholders.....	9,475,379	377,890	390,390	390,390
Earned surplus.....	17,877,114	17,999,186	20,107,677	25,195,896
Other.....	19,880,717	27,142,315	32,325,589	32,467,440

The combined companies showed a sizable increase in the amount of business done in 1961 compared with 1960. The number of small loans made to the public during 1961 increased from 1,094,512 to 1,169,699, or by about 7 p.c., and the amount of such loans rose from \$547,824,471 to \$605,687,740, or by about 11 p.c. The average small loan made

* Further details are given in the Department of Insurance report *Small Loans Companies and Money-Lenders* for the year ended Dec. 31, 1961.

was approximately \$518 compared with \$501 in 1960. At the end of the year, small loans outstanding numbered 992,169 for an amount of \$426,157,274 or an average of \$430 per loan; comparable figures for 1960 were 957,965 and \$391,548,554, respectively.

Gross profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts, increased from \$28,220,425 in 1960 (\$20,922,043 being the profit on small loans and \$7,298,382 the profit on business other than small loans) to \$28,975,756 in 1961 (\$20,746,644 being the profit on small loans and \$8,229,112 the profit on business other than small loans).

Section 3.—Sales of Canadian Bonds*

Previous editions of the Year Book have traced sales of Canadian bonds to the end of 1961. This review continues the record, discussing new issues placed in 1962 with some comment on developments in the first half of 1963.

Excluding all financing of less than one year, the preliminary total of new security issues placed in 1962 has been calculated at \$5,428,161,039. This total is exclusive of \$207,783,000 other financing committed for in 1962 but not 'closed' until 1963. Of such 'open' financing, \$64,774,000 was payable in Canada and \$143,009,000 was payable in United States funds. Table 6 shows the sales of bonds by class and country of sale for the ten years 1953-62.

* Prepared by E. C. Gould, Financial Editor, *The Monetary Times*.

6.—Sales of Canadian Bonds, by Class of Bond and Country of Sale, 1953-62

NOTE.—Figures from 1904 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

(SOURCE: *The Monetary Times*)

Year	CLASS OF BOND					
	Federal ¹	Provincial	Municipal	Parochial and Miscellaneous	Corporation	Total
	\$	\$	\$	\$	\$	\$
1953.....	1,950,548,900	436,616,900	186,784,460	35,242,605	336,295,800	2,945,488,665
1954.....	3,200,540,900	400,916,000	209,640,778	51,352,886	606,532,900	4,468,983,364
1955.....	1,348,500,000	434,165,000	226,991,573	66,063,850	585,795,900	2,661,516,323
1956.....	1,557,000,000	557,888,000	265,936,167	52,661,700	860,184,400	3,093,670,267
1957.....	2,468,792,850	645,959,500	305,726,988	49,966,700	1,024,604,100	4,495,050,138
1958.....	2,624,534,050	791,271,000	401,426,925	62,081,000	729,255,000	4,608,567,975
1959.....	2,896,050,600	653,001,875	351,009,264	73,804,100	369,025,000	4,342,890,839
1960.....	2,680,018,600	616,025,000	386,894,288	85,320,000	498,886,000	4,267,173,888
1961.....	3,300,233,950 ¹	996,696,931	339,254,024	102,515,500	567,059,500	5,305,809,905
1962.....	3,420,799,600	860,060,800	323,450,239	120,740,400	703,101,000	5,428,161,039
Year				COUNTRY OF SALE		
				Canada ¹ and elsewhere than U.S.	United States	Total
				\$	\$	\$
1953.....				2,638,889,450	306,599,215	2,945,488,665
1954.....				4,295,385,364	173,598,000	4,468,983,364
1955.....				2,506,953,323	154,563,000	2,661,516,323
1956.....				2,623,137,285	470,532,982	3,093,670,267
1957.....				3,888,174,038	606,876,100	4,495,050,138
1958.....				4,121,617,354	486,950,621	4,608,567,975
1959.....				3,870,034,408 ¹	472,856,431	4,342,890,839
1960.....				3,984,004,888 ¹	283,169,000	4,267,173,888
1961.....				5,157,407,905 ¹	148,402,000 ¹	5,305,809,905
1962.....				4,727,435,300	700,725,739	5,428,161,039

¹ Excludes treasury bills, deposit certificates and other financing for a term of less than one year and also the Canada Conversion Loan of 1958.

The federal total of \$3,420,799,600 includes a preliminary amount of \$1,720,799,600 for Series 17, Canada Savings Loan, compiled for subscriptions received to May 13, 1963 by the Securities Department of the Bank of Canada. This figure will be revised when complete returns are available. A similar adjustment in connection with the 1961 Series 16 accounts for the revision of the 1961 figures in Table 7.

Series 17 matures in 1976 and will yield an average of 5.11 p.c. if held to maturity. Interest is payable annually at the rate of: 4½ p.c. for the first three years, 5 p.c. for the next three years, and 5½ p.c. for the remaining eight years. The average yield at 5.11 p.c. contrasts favourably with previous top yields at 4.98 p.c. in 1959, 4.71 p.c. in 1960, and 4.60 p.c. in 1961. Several attractive features were continued in Series 17. The bonds could be registered in names of adults, children, estate or trustees under a will, or administrators of an estate; they were sold in denominations from \$50 to \$5,000 up to a maximum limit of \$10,000 per name; as with all other savings loan issues, they are cashable any time at full face value, plus earned interest.

7.—Sales of Canada Savings Loans, 1946-62

NOTE.—Figures for the issues 1946-61 are for the entire loans, i.e., either to the year-end or to the closing date within the year or in the subsequent year. The figure for Series 17 (1962) is to May 13, 1963 and is subject to revision when complete returns are available.

Series	Applications	Limits per Individual	Total Sales
	No.	\$	\$
Series 1, 1946	1,248,444	2,000	535,285,550
Series 2, 1947	910,742	1,000	287,733,100
Series 3, 1948	862,686	1,000	260,491,150
Series 4, 1949	1,015,579	1,000	320,200,000
Series 5, 1950	963,048	1,000	285,600,000
Series 6, 1951	986,900	5,000	394,642,400
Series 7, 1952	982,274	5,000	380,781,100
Series 8, 1953	1,267,506	5,000	850,548,900
Series 9, 1954	1,175,264	5,000	800,540,900
Series 10, 1955	1,180,000	5,000	729,100,000
Series 11, 1956	1,242,250	5,000	853,810,150
Series 12, 1957	1,293,163	10,000	1,216,711,900
Series 13, 1958	1,179,198	10,000	923,697,450
Series 14, 1959	1,486,794	20,000	1,536,050,600
Series 15, 1960	1,274,058	10,000	981,048,600
Series 16, 1961	1,402,004*	10,000	1,100,283,950*
Series 17, 1962	1,685,756	10,000	1,720,799,600

Provincial financing at \$860,060,800 in 1962 comprised direct sales totalling \$422,784,000 and provincial guarantees for utility, municipal and educational purposes at \$437,276,800. Excluding all provincial short-term financing of less than one year (as represented by Treasury Bill issues from the provinces of Manitoba and Saskatchewan), direct provincial entries into the bond market during 1962 were as follows:—

Province	Month	Amount	Province	Month	Amount
		\$			\$
Saskatchewan	January	15,000,000	New Brunswick	September	5,000,000
Nova Scotia	February	10,000,000	Nova Scotia	October	15,000,000
Ontario	February	60,000,000	Saskatchewan	October	15,000,000
Quebec	March	60,000,000	Ontario	November	60,000,000
Saskatchewan*	March	11,600,000	New Brunswick	November	5,000,000
Manitoba*	March	20,184,000	Quebec	November	60,000,000
Saskatchewan	April	15,000,000	Prince Edward Island	November	2,500,000
Newfoundland	April	11,000,000			
Quebec	July	60,000,000			
New Brunswick	August	7,500,000			
			TOTALS		422,784,000

* Provincial Savings Bonds, Series 2.

In the category of direct municipal financing (exclusive of municipal issues, guaranteed by various provinces), the market for new flotations totalled \$444,199,639 in 1962. Exclusive of loans for parochial and other educational purposes at \$120,740,400, these issues amounted to \$323,459,239. Largest municipal flotations in 1962 were undertaken by the urban centres of Winnipeg, London, Ottawa, Hamilton, Toronto and Montreal.

In the 1962 Canadian bond market, new corporate bond sales totalled \$703,101,000. Although this was significantly lower than the peak of such sales in 1957 and slightly lower than the 1958 total, it was well above the totals for the three immediately preceding years, as shown in Table 6. The recent upward trend may be attributed to generally improved business environment and a better borrowing position for more corporations.

The largest single corporate borrowers during 1962 were: the Aluminum Company of Canada Limited which entered the market in May with an issue of \$100,000,000, 5.10 p.c., promissory notes, maturing in 1992; and Wabush Securities Corporation which entered the market in August with an issue of \$130,000,000 in first mortgage and collateral trust bonds, Series "A", maturing Jan. 2, 1991. Both issues were placed privately on the United States market.

The largest single corporate borrowers on the Canadian market during 1962 were The Bell Telephone Company of Canada and Price Brothers & Company Limited. Bell entered the market in June with an issue of \$30,000,000, 5½ p.c., first mortgage bonds, Series "W", maturing June 15, 1984. This issue was offered at \$99.00 by a syndicate of dealers, headed by A. E. Ames & Company Limited, and the Bank of Montreal. Price Brothers entered the market in December with a two-part issue of \$25,000,000, 5½ p.c., serial debenture and sinking fund bonds, Series "A", maturing on Dec. 1, 1964 to 1968 and on Dec. 1, 1982. This issue was sold privately at \$100.50 by a syndicate of dealers, headed by Royal Securities Corporation Limited; Wood, Gundy & Company Limited; W. C. Pitfield & Company Limited; and Dominick Corporation of Canada. There was an additional amount of \$6,626,000,000 for short-term financing of less than one year in 1962. The increases from \$6,394,000,000 in 1961 and \$6,490,000,000 in 1960 indicated a growing importance for the Canadian money market with a sound development since its inception in June of 1954.

In addition to the federal sales of Treasury Bills during 1962, the Provinces of Manitoba and Saskatchewan floated Treasury Bill issues of their own and, later in the year, the City of Montreal began financing in this way. At the same time, several other large Canadian municipalities floated short-term security issues of less than one year. Along with the introduction of Bankers' Acceptances (June 11, 1962), these trends have significantly increased the volume of security financing on a near-term basis.

Because of the exchange crisis in June 1962, interest rates (on the bond market and elsewhere) fluctuated much more abruptly than is customary in Canada. They were forced to a sharply higher level, particularly on short-term funds, in order to attract investments and thus ease the dollar position. As the dollar strengthened, the rates declined steadily but returned to much higher levels toward the end of the year. During the first six months of 1963, the situation became more stabilized at lower levels again and with much less confusion on near-term markets.

Mid-year returns on security financing indicated a relatively stable market during the first half of 1963 with a somewhat more satisfactory reception for new issues. An outstandingly significant trend was the marked increase in new Canadian bond sales in the United States.

CHAPTER XXIV.—INSURANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Insurance, for the purpose of statistical analysis, is usually classified as life, fire and casualty. Most companies operate under Federal Government registration although some have provincial licences only. Also many fraternal orders and societies are engaged in this kind of business. The special articles relating to insurance that have appeared in previous editions of the Year Book are listed in Part II of Chapter XXVI under the heading "Insurance". This volume contains, in Section 1, a specially prepared article on the life insurance business in Canada, its regulation, its growth, and its place in the life of the individual and in the economic structure of the country.

Section 1.—Life Insurance†

Life insurance in Canada is transacted by 128 companies and by 91 fraternal benefit societies. Of the companies, 32 are federal companies, having been incorporated by special Act of Parliament, 27 are provincial companies incorporated pursuant to provincial legislation and 69 are companies incorporated in countries other than Canada, principally the United States and Britain. Of the fraternal benefit societies, 15 have been incorporated by special Act of Parliament, 30 were incorporated in the United States and the remainder were formed under provincial legislation. In addition, there are a large number of provincially incorporated mutual benefit societies and funeral societies that provide small amounts of life insurance.

All companies and societies transacting life insurance in Canada are subject to government supervision in one form or another. There is a Department of Insurance as part of the organization of the Federal Government and each province has a Department of Insurance or an Insurance Branch of a department charged with responsibility for supervising insurance companies. All companies and societies incorporated by Parliament, and all companies and societies incorporated out of Canada and transacting insurance in Canada,

* Material in this Chapter, except as otherwise indicated, has been prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the annual reports of the Department of Insurance.

† Prepared by Richard Humphrys, Assistant Superintendent of Insurance, Ottawa.

are required to be registered under statutes administered by the federal Department of Insurance; these companies and societies are also required to be licensed under the laws of each province in which they transact business. Companies incorporated under provincial legislation are required to be licensed under the laws of the province of incorporation and of any other province in which they transact business; some provincial companies may also be registered under statutes administered by the federal Department of Insurance.

The federal Department of Insurance exercises general financial supervision over the companies and societies registered with it, mainly for the purpose of seeing that they maintain a solvent position and are able to meet their insurance obligations. Hence, all registered companies and societies must file annual statements with the Department giving the details of their condition and affairs and all such companies are subject to examination at their principal offices in Canada by Departmental examiners. The legislation prescribes the classes of assets in which Canadian companies may invest their funds, the classes of assets that must be held in Canada to cover the liabilities in Canada of British and foreign companies, and methods for valuing these assets and liabilities.

Companies and societies from outside Canada are required to maintain assets in Canada, either on deposit with the Minister of Finance or vested in trust with corporate trustees, at least equal to their liabilities in Canada. If assets are vested in trust with corporate trustees, the relevant trust deed must be so drawn up as to require the approval of supervisory authorities for the release of assets. The classes of assets that may be deposited with the Minister of Finance or so vested in trust are, in general, the same as those in which a Canadian company may invest its funds.

Provincial insurance departments, in addition to carrying out financial supervision of provincial companies not registered with the federal Insurance Department, administer provincial insurance Acts which deal with the terms of insurance contracts issued in the province, the licensing of insurance agents and other matters relating to the conduct of insurance within the province.

Since the larger companies are all federal companies and all British and foreign companies and societies must be registered with the federal Department of Insurance, the companies so registered transact about 95 p.c. of the life insurance business in Canada. The annual statements submitted by these companies are published in the annual reports of the Department, thus providing a ready source of statistical information concerning life insurance in Canada of companies registered with the Department. Each provincial insurance department also publishes an annual report giving summary statistics concerning insurance in the province and the financial statements of companies incorporated in the province. However, most of the statistics used in the following paragraphs are drawn from the reports of the federal Department of Insurance, and may be taken to be sufficiently representative to give a reliable picture of the industry.

The total life insurance in force in Canada at the end of 1962, including both federally registered and provincially licensed companies and societies, amounted to approximately \$56,342,000,000.

<i>Class of Company or Society</i>	<i>Insurance in Force</i>
	\$'000,000
Federally Registered—	
Companies.....	52,233
Societies.....	790
Total, Federally Registered.....	53,023
Provincially Licensed Only—	
Within Province of Incorporation—	
Companies.....	2,601
Societies.....	169
Outside Province of Incorporation—	
Companies.....	409
Societies.....	140
Total, Provincially Licensed Only.....	3,319
GRAND TOTAL.....	56,342

This is truly an enormous sum and, with the exception of the United States, it exceeds the amount of life insurance in force in any other country in the world. In relation to national income, the amount of life insurance in force in Canada exceeds that of any other country including the United States, the ratio being about 180 p.c. for Canada and about 150 p.c. for the United States. At the end of 1962 the life insurance in force per capita amounted to \$3,034. The very startling growth, particularly over the past few years, is shown in the following statement of insurance in force in federally registered companies.

<u>Year</u>	<i>In Force at Beginning of Year</i>	<i>Increase in Force for the Year</i>	<i>Per- centage Gain</i>
	\$'000,000	\$'000,000	
1930.....	6,157	335	5.4
1935.....	6,221	38	0.6
1940.....	6,776	200	2.9
1945.....	9,140	612	6.7
1950.....	14,409	1,337	9.3
1951.....	15,746	1,490	9.5
1952.....	17,236	1,855	10.8
1953.....	19,091	2,136	11.2
1954.....	21,227	1,908	9.0
1955.....	23,135	2,317	10.0
1956.....	25,452	3,635	14.3
1957.....	29,087	4,000	13.8
1958.....	33,087	3,409	10.3
1959.....	36,496	4,378	12.0
1960.....	40,874	3,775	9.2
1961.....	44,649	3,635	8.1
1962.....	48,284	3,949	8.2

Life insurance is divided into three main classes—ordinary, group and industrial. The term “ordinary” describes insurance issued by way of individual policies to individual policyholders; “group” describes insurance covering a group of persons under a single contract, the most common example being the employees of a single employer; and “industrial” applies to policies for small amounts, usually less than \$1,000, calling for weekly premiums to be collected by an agent of the company at the home of the insured person.

Ordinary insurance in force increased from \$13,600,000,000 at the end of 1952 to \$33,300,000,000 at the end of 1962. Group insurance also increased very greatly, both absolutely and relative to the volume of the other two classes; in 1952 it amounted to only \$3,800,000,000, representing less than one quarter of the total, but in 1962 it reached over \$18,000,000,000, one third of the total. Industrial insurance, on the other hand, decreased over the years and appears to be gradually vanishing from the scene; it reached a peak of \$1,700,000,000 in 1954 and declined steadily to \$867,000,000 at the end of 1962. To a large extent, the purpose it once served is being taken over by group insurance.

In addition to the growth in total amounts, there has been a substantial increase in the size of individual policies. At the end of 1962, the average size of ordinary policies in force was \$4,169 compared with \$2,542 ten years earlier. For group business, the average amount of insurance in force per person covered under group policies was \$1,209 compared with \$993 ten years earlier. However, the year-to-year trend for group insurance has been uneven due in part to the rapid increase in the number of groups covered. The trend toward increased size appears more sharply from an examination of the average size of policies issued each year rather than the average size of policies in force. In 1962, the average size of new ordinary policies was \$6,732; in 1952 it was \$3,842.

The increases in average size of policies and in total insurance in force are attributable partly to larger policies of the same general types as have been issued over the years, partly to the growth in population and national income leading to increased insurance needs, and partly to the trend toward term insurance and away from policies providing for lifetime coverage or for endowment benefits. Under term insurance, the coverage extends for a specified period of years only and, consequently, larger amounts are obtainable for a given premium than in the case of policies providing for lifetime coverage. In the

search for security there is evidently a strong effort being made to obtain larger amounts of protection for dependants in the years of age when policyholders are likely to have young children, at the expense of having no insurance protection in later years after the term insurance expires. Many influences have led to this trend. Inflation and rising prices have forced it to some extent because larger amounts are needed to give adequate protection. The development of employer-employee pension plans has provided a secure income for retirement years and thus permitted greater attention to be given to immediate protection of dependants through insurance; this has been particularly so where pension plans include widows' benefits. In the absence of pension plans, endowment insurance policies and policies providing lifetime coverage were sometimes used, not only to provide insurance protection but also to build up equity values to be available at retirement. In addition to these influences, the growth of mutual savings funds and investment funds has undoubtedly drawn off some share of the money that would otherwise have gone toward the higher premium plans of insurance.

A further important point in this connection is the growth in group insurance. Group insurance is usually issued on the one-year term plan, i.e., insurance is renewed from year to year on the basis of a premium determined each year taking into account the amounts of insurance and the ages of the persons covered. Such insurance principally covers employees of a single employer but other groups may be insured in this way also; for example, members of a labour union, borrowers from a financial institution, or members of a professional group. The insurance provided under such a plan for any particular person usually exists only while he is a member of the group. Thus the coverage is temporary and is likely to exist only in the years of active employment—years when mortality rates are low. The premiums are low as compared with insurance that continues for the lifetime of the person insured since in the latter case the payment of the face amount is certain; the only uncertainty is the time of payment. (It may be noted, however, that there is a growing trend in group insurance to include a small amount of insurance on retired employees; this is, in effect, insurance continuing for the whole of life. The inclusion of coverage on retired employees will have a significant influence in raising the cost of group insurance plans.)

The appeal of group insurance arises not only from the low premium due to low mortality and low administrative costs, but also from the appeal to employers as a convenient and popular 'fringe' benefit that relieves employers and fellow employees of responsibility that they might otherwise feel toward destitute dependants of a deceased employee.

The growth of group insurance on the lives of creditors of financial institutions is another important development. Such insurance is earmarked for the discharge of specific obligations.

Even among ordinary insurance policies there has been a substantial growth over the years in the relative amount of term insurance. In 1925 only 5 p.c. of new life insurance issued by federally registered Canadian life insurance companies was on the term plan, whereas, in 1962, 39 p.c. was either on the term plan or in the form of temporary additions to sums insured; in 1925 only 5 p.c. of ordinary insurance in force in such companies was term insurance, whereas, in 1962, 25 p.c. was term insurance or temporary additions to sums insured. Although these percentages are derived from the business both in and out of Canada of federally registered Canadian companies, the trend also applies to the business in Canada. In fact, the trend in Canada is probably even more strongly toward term insurance. Figures for the amount of term insurance issued in Canada by Canadian companies are not readily available; however, for British and foreign companies in 1962, 36 p.c. of the business in force in Canada consisted of term insurance or temporary additions to the sums insured. This compares with the 25 p.c. already mentioned for Canadian companies both in and out of Canada.

Another important aspect of the life insurance business falls under the head of annuities. From the social viewpoint, the emphasis here is more on the problem of providing an income at older ages than of providing protection for dependants. However, the provision

of retirement income is not completely divorced from insurance. Many insurance policies provide not only for payment on death of the policyholder but also, as an alternative, for payment of a lump sum or an annuity to the policyholder should he survive to a specified age. Also, many insurance policies taken out principally for the protection of dependants are surrendered at advanced ages and the proceeds are used to provide retirement income when the need for dependants' protection has decreased or disappeared.

The annuity business of life insurance companies falls into two categories—annuity contracts issued to individuals and annuity contracts providing benefits to the members of a group. The most common example of the use of the latter is the issuance of a group contract to an employer to provide retirement annuities to his employees. There has been a rapid increase in the annuity business over the years but particularly in the group annuity category and the growth of employer-employee pension plans is principally responsible for this increase. Income tax concessions granted in favour of organized pension plans have encouraged the growth of group annuities but, until recently, no such incentive existed for individual annuities.

The number of individual annuity contracts in force at the end of 1962 under which the payment of benefit has not yet started was 96,692, and the gross annual payment provided for under such contracts amounted to \$52,000,000. Individual vested contracts numbered 21,627 providing annual payments of \$13,000,000. Corresponding figures for 1952 were \$38,000,000 and \$6,000,000, respectively. Under group annuities, the number of contracts in force at the end of 1962 was 8,276, covering some 536,886 individuals. The annual payment provided for on the basis of current contributions to vesting date was \$758,000,000. The corresponding figures for 1952 were 2,026 contracts covering 207,839 individuals with an estimated annual payment of \$217,000,000.

The figures of amounts of insurance in force give an indication of the volume and growth of the business and indicate also the potential benefits to policyholders or other beneficiaries. The actual benefit payments year by year are also of interest. Although the principal purpose of life insurance policies is to provide a benefit payable on the death of the policyholder, nevertheless life insurance policies in use are of great variety and many provide benefits to policyholders that are not limited to a payment on death. Endowment policies provide for payment of the face amount at a specified time; nearly all policies provide for the payment of cash surrender values if the policy is terminated prior to maturity; some policies provide for payments to be made on disability of the policyholder; and many policies provide for the payment of dividends based upon the profits of the company. Amounts paid to policyholders or beneficiaries in 1962 under policies in Canada by federally registered companies, with an indication of the nature of the payment, were as follows:—

<i>Type of Benefit</i>	<i>Amount</i>	<i>Type of Benefit</i>	<i>Amount</i>
	\$		\$
Death benefits.....	230,746,890	Surrender benefits.....	175,746,797
Maturity benefits.....	50,154,364	Annuity benefits.....	36,117,936
Disability benefits.....	6,570,931	Dividends.....	139,644,287

The extent to which the 'savings' element of life insurance contracts is made use of by policyholders is illustrated by the fact that cash surrender values paid on termination of policies amounted to \$176,000,000 compared with death benefits of \$231,000,000.

The funds available to meet these payments to policyholders arise from premium payments and from interest earned by the companies on their portfolio of investments. Premium payments to federally registered companies for life insurance and for annuities in Canada during 1962 amounted to \$1,028,000,000 (life insurance premiums, \$807,000,000 and annuity premiums, \$221,000,000) and investment income amounted to \$598,000,000. Taking federal and provincial companies and societies together, the insurance premiums in Canada in 1962 amounted to \$873,000,000. These income items must be used to meet policy claims, to provide any necessary increase in reserves and to meet expenses.

The total premium income has been increasing year by year, as would be expected after noting the increase in the insurance in force. Life insurance premiums and annuity premiums received by federally registered and provincially licensed companies represented 3.83 p.c. of personal disposable income in Canada in 1962. This ratio reached a high of 7.99 p.c. in 1933, dropped steadily to about 3.4 p.c. in 1942, 1943 and 1944, and has since varied irregularly between a minimum of 3.18 p.c. in 1952 and a maximum of 3.97 p.c. in 1961. There is no very clear trend in recent years, although a gradual but irregular increase has occurred since 1952. In view of the growth in personal savings as a proportion of disposable income, it might have been expected that life insurance premiums would grow even faster than they have. The rapid growth in other savings media together with a swing toward lower premium plans of insurance has evidently reduced to some extent the relative importance of life insurance in the savings field.

The extent to which life insurance companies act as a medium for savings and investment is illustrated by great growth in their assets. Although these funds are referred to as being assets of the companies and are in fact owned by the companies, they are, for the most part, much in the nature of trust funds since the companies are required by law to hold the major portion of such funds in reserve against future liabilities. The investment of these funds forms an important part of the activities of life insurance companies and, of course, has an important effect on the economy of the country. At the end of 1962, federally registered Canadian life insurance companies had assets amounting to \$9,800,000,000 applicable to their life insurance business. Of this amount, 45 p.c. was invested in bonds, 6 p.c. in stocks (preferred 1.55 p.c. and common 4.11 p.c.), 38 p.c. in mortgage loans, 3 p.c. in real estate, 5 p.c. in policy loans and the remainder in other minor categories. Of the total amount, the assets invested in Canadian securities and mortgages amounted to \$5,900,000,000. British and foreign companies transacting insurance in Canada maintain assets on deposit with the Minister of Finance or vested in trust with Canadian trust companies amounting to \$2,200,000,000. Of this amount, 69 p.c. was in bonds, 3 p.c. in stocks and 27 p.c. in mortgages. Almost all of these investments are in Canadian securities.

The recent growth in the assets of federally registered life insurance companies is shown in the following statement.

<u>Year</u>	<u>Total Assets</u>		<u>Year</u>	<u>Total Assets</u>
	\$'000,000			\$'000,000
1950.....	4,612	1958.....	7,583	
1952.....	5,207	1960.....	8,610	
1954.....	5,872	1962.....	9,812	
1956.....	6,670			

The change in the distribution of these assets from 1950 to 1962 was as follows:—

<u>Type of Investment</u>	<u>1950</u>	<u>1962</u>		<u>Type of Investment</u>	<u>1950</u>	<u>1962</u>
	p.c.	p.c.			p.c.	p.c.
Bonds.....	66	45		Policy loans.....	5	5
Stocks.....	6	6		Other.....	4	3
Mortgage loans.....	18	38		TOTALS.....	100	100
Real estate.....	1	3				

The most significant change during the period was the reduction in the proportion of assets invested in government bonds and the increase in the proportion invested in mortgage loans. Mortgage loans are a particularly suitable investment for life insurance companies since they are usually of long term and they produce a fixed interest yield; this enables an insurance company to undertake the long-term interest commitments involved in issuing life insurance and annuity contracts.

The yield on investments of registered Canadian companies has risen steadily for many years as shown in the following statement.

<i>Year</i>	<i>Net Rate of Investment Income Earned</i>	<i>Year</i>	<i>Net Rate of Investment Income Earned</i>
	<i>p.c.</i>		<i>p.c.</i>
1954.....	4.06	1959.....	4.80
1955.....	4.19	1960.....	4.98
1956.....	4.31	1961.....	5.13
1957.....	4.52	1962.....	5.26
1958.....	4.66		

Further statistical details are shown in the following Subsections.

Subsection 1.—Summary of Life Insurance in Canada

Tables 1 and 2 summarize insurance premiums, claims, amounts of new policies effected, and amounts of insurance in force on Dec 31 for the years 1961 and 1962. These data are presented in Table 1 on the basis of the supervising government authorities for the companies and societies concerned, and the same data are presented in Table 2 classified on the basis of nationality of company or society and by supervising government authorities.

1.—Summary of Life Insurance in Canada according to Supervising Government Authority, 1961 and 1962

<i>Year and Supervising Authority</i>	<i>Insurance Premiums</i>	<i>Claims¹</i>	<i>New Policies Effected</i>	<i>Insurance in Force, Dec. 31</i>
	<i>\$'000</i>	<i>\$'000</i>	<i>\$'000</i>	<i>\$'000</i>
1961				
Federally Registered.....	782,473	270,532	6,266,222	49,023,976
Companies.....	771,443	265,784	6,113,480	48,284,483
Societies.....	11,030	4,748	152,742	739,493
Provincially Licensed Only.....	50,790	18,122	546,183	2,873,961
Within Province of Incorporation—				
Companies.....	38,057	12,226	422,295	2,230,465
Societies.....	3,179	2,061	22,371	165,259
Outside Province of Incorporation—				
Companies.....	7,051	1,988	83,097	342,627
Societies.....	2,503	1,847	18,420	135,610
Totals, 1961.....	833,263	288,654	6,812,405	51,897,937
1962				
Federally Registered.....	818,873	292,235	6,174,991	53,023,230
Companies.....	807,135	287,472	6,027,070	52,233,370
Societies.....	11,738	4,763	147,921	789,860
Provincially Licensed Only.....	53,875	19,016	647,669	3,318,825
Within Province of Incorporation—				
Companies.....	41,391	12,754	517,416	2,601,357
Societies.....	3,196	2,245	17,443	168,927
Outside Province of Incorporation—				
Companies.....	6,628	2,032	93,631	408,719
Societies.....	2,660	1,985	19,179	139,822
Totals, 1962.....	872,748	311,251	6,822,660	56,342,055

¹ Death, disability and maturity under insurance and annuity contracts.

2.—Summary of Life Insurance in Canada, by Nationality of Company or Society, 1961 and 1962

Year and Nationality of Company	Insurance Premiums	Claims ¹	New Policies Effectuated	Insurance in Force, Dec. 31
	\$'000	\$'000	\$'000	\$'000
1961				
Canadian Companies—				
Federally registered.....	513,674	183,171	4,201,873	33,143,379
Provincially licensed only.....	45,108	14,214	505,392	2,573,092
Canadian Societies—				
Federally registered.....	6,420	2,975	125,983	531,985
Provincially licensed only.....	5,682	3,908	40,791	300,869
British Companies—				
Federally registered.....	35,375	7,005	310,021	1,778,256
Foreign Companies—				
Federally registered.....	222,394	75,608	1,601,586	13,362,848
Foreign Societies—				
Federally registered.....	4,610	1,773	26,759	207,508
Totals, 1961.....	833,263	288,654	6,812,405	51,897,937
1962				
Canadian Companies—				
Federally registered.....	537,361	196,570	4,081,610	35,907,033
Provincially licensed only.....	48,019	14,786	611,047	3,010,076
Canadian Societies—				
Federally registered.....	6,565	2,914	118,676	567,532
Provincially licensed only.....	5,856	4,230	36,622	308,749
British Companies—				
Federally registered.....	36,213	8,781	350,148	2,040,700
Foreign Companies—				
Federally registered.....	233,560	82,121	1,595,312	14,285,637
Foreign Societies—				
Federally registered.....	5,174	1,849	29,245	222,328
Totals, 1962.....	872,748	311,251	6,822,660	56,342,055

¹ Death, disability and maturity under insurance and annuity contracts.

Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has almost doubled since 1953—evidence of the general recognition of the value of life insurance for the adequate protection of dependants against misfortune.

The operations analysed in the tables of this Subsection, with the exception of Table 7, include only those companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for about 95 p.c. of the life insurance in force in Canada.

3.—Life Insurance Effectuated and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1951-62

NOTE.—Figures for 1889-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; and for 1940-49 in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1084-1085.

Year	New Insurance Effectuated during Year	Insurance in Force Dec. 31				Insurance in Force per Capita ¹
		Canadian Companies	British Companies	Foreign Companies	Total	
	\$	\$	\$	\$	\$	\$
1880.....	13,906,887	37,838,518	19,789,863	33,643,745	91,272,126	21.45
1890.....	39,802,956	135,218,990	31,613,730	81,591,847	248,424,567	51.98
1900.....	67,729,115	267,151,086	39,485,344	124,433,416	431,069,846	81.32
1910.....	150,785,305	565,667,110	47,816,775	242,629,174	866,113,059	122.51
1920.....	630,110,900	1,664,348,605	76,883,090	915,793,798	2,657,025,493	310.55
1930.....	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	636.00
1940.....	590,205,536	4,609,213,977	145,603,299	2,220,505,184	6,975,322,460	612.89
1950.....	1,798,864,211	10,756,249,942	342,878,530	4,646,207,595	15,745,836,067	1,148.33
1951.....	1,990,926,006	11,807,992,826	391,382,883	5,036,207,593	17,235,583,302	1,230.28
1952.....	2,287,264,465	13,085,349,418	443,275,711	5,562,003,368	19,090,628,497	1,320.33
1953.....	2,551,393,073	14,526,740,295	519,137,847	6,181,027,477	21,226,905,619	1,429.90
1954.....	2,656,722,341	15,765,916,390	596,756,619	6,771,905,859	23,134,578,868	1,513.35
1955.....	3,154,670,863	17,401,229,498	691,660,141	7,358,681,886	25,451,571,525	1,621.23
1956.....	4,119,767,664	19,783,194,955	819,968,279	8,484,252,797	29,087,416,143	1,808.83
1957.....	4,936,358,903	22,262,730,280	994,762,620	9,829,563,601	33,087,056,501	1,992.00
1958.....	5,129,714,126	24,560,264,322	1,170,343,106	10,765,171,257	36,495,778,685	2,136.76
1959.....	5,622,229,317	27,695,965,612	1,332,991,403	11,844,852,757	40,873,809,772	2,337.92
1960.....	5,692,887,763	30,418,380,871	1,554,844,168	12,675,749,459	44,648,974,498	2,498.54
1961.....	6,113,480,078	33,143,378,921	1,778,255,673	13,362,848,638	48,284,483,232	2,647.47
1962.....	6,027,069,888	35,907,032,820	2,040,700,311	14,285,636,913	52,233,370,044	2,812.78

¹ Based on official estimates of population.

4.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1960-62

Item		1960	1961	1962
Canadian Companies—				
New policies effectuated during year.....	No.	379,785	382,511	372,400
	\$	3,887,468,819	4,201,873,094	4,081,609,538
Policies in force Dec. 31.....	No.	5,101,467	5,171,891	5,228,321
	\$	30,418,380,871	33,143,378,921	35,907,032,820
Policies ceased by death or maturity.....	No.	47,339	49,955	52,077
	\$	158,926,397	174,004,921	187,491,327
Insurance premiums.....	\$	487,434,347	513,673,584	537,360,977
Claims incurred ¹	\$	167,409,481	183,170,511	196,569,562
British Companies—				
New policies effectuated during year.....	No.	29,196	30,232	35,986
	\$	301,251,878	310,020,907	350,148,518
Policies in force Dec. 31.....	No.	254,683	265,501	282,913
	\$	1,554,844,168	1,778,255,673	2,040,700,311
Policies ceased by death or maturity.....	No.	2,046	1,948	2,068
	\$	5,187,138	5,766,859	7,429,904
Insurance premiums.....	\$	29,692,928	35,374,844	36,213,550
Claims incurred ¹	\$	6,162,832	7,004,949	8,781,188
Foreign Companies—				
New policies effectuated during year.....	No.	291,208	291,849	284,165
	\$	1,504,167,066	1,601,586,077	1,595,811,832
Policies in force Dec. 31.....	No.	4,831,044	4,784,618	4,726,342
	\$	12,675,749,459	13,362,848,638	14,285,636,913

¹ Death, disability and maturity under insurance and annuity contracts.

4.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1960-62—concluded

Item		1960	1961	1962
Foreign Companies—concluded				
Policies ceased by death or maturity.....	No.	58,707	57,882	60,962
Insurance premiums.....	\$	67,651,012	70,842,616	77,322,635
Claims incurred ¹	\$	211,679,249	222,394,427	233,560,185
		71,502,111	75,608,283	82,121,435
All Companies—				
New policies effected during year.....	No.	700,189	704,592	692,551
	\$	5,692,887,763	6,113,480,078	6,027,069,888
Policies in force Dec. 31.....	No.	10,187,194	10,222,010	10,237,576
	\$	44,648,974,498	48,284,483,232	52,233,370,044
Policies ceased by death or maturity.....	No.	108,092	109,785	115,107
Insurance premiums.....	\$	231,764,547	250,614,396	272,243,866
Claims incurred ¹	\$	728,676,524	771,442,855	807,134,712
		245,074,424	265,783,743	287,472,185

¹ Death, disability and maturity under insurance and annuity contracts.

5.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1960-62

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
1960						
Ordinary Policies—						
Canadian.....	375,973	2,747,978,352	7,309	4,930,290	20,592,489,650	4,177
British.....	29,090	255,094,937	8,769	224,549	1,392,358,202	6,201
Foreign.....	253,044	1,184,458,668	4,681	2,495,974	7,307,676,471	2,928
Industrial Policies—						
Canadian.....	1,066	1,129,632	1,060	153,559	78,106,041	509
British.....	—	—	—	29,754	3,802,788	128
Foreign.....	34,840	18,218,956	523	2,317,534	871,453,371	376
1961						
Ordinary Policies—						
Canadian.....	379,029	2,844,106,136	7,504	5,010,227	21,937,706,027	4,379
British.....	30,122	280,458,908	9,311	236,723	1,579,552,517	6,673
Foreign.....	257,848	1,236,539,455	4,796	2,589,688	7,787,245,977	3,007
Industrial Policies—						
Canadian.....	619	687,290	1,110	142,821	74,134,955	519
British.....	—	—	—	28,310	3,551,382	125
Foreign.....	30,871	16,677,383	540	2,177,031	830,179,381	381
1962						
Ordinary Policies—						
Canadian.....	369,696	2,860,037,465	7,736	5,075,006	23,230,070,969	4,577
British.....	35,873	325,791,058	9,082	255,171	1,808,510,021	7,087
Foreign.....	262,176	1,242,399,386	4,927	2,661,281	8,278,944,823	3,111
Industrial Policies—						
Canadian.....	—	—	—	133,151	70,187,291	527
British.....	—	—	—	27,191	3,365,876	124
Foreign.....	29,079	16,013,266	551	2,047,127	793,138,724	387

6.—Group Life Insurance Effected and in Force in Canada by Companies under Federal Registration, 1960-62

Year and Nationality of Company	Effected		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
	No.	\$	No.	No.	\$	\$
1960						
Canadian.....	2,746	1,138,360,835	17,618	9,339,582	9,747,785,180	1,044
British.....	106	46,156,941	380	31,623	158,683,178	5,018
Foreign.....	3,324	301,489,442	17,536	3,259,336	4,496,619,617	1,380
1961						
Canadian.....	2,863	1,357,079,668	18,843	10,170,774	11,131,537,939	1,094
British.....	110	29,561,999	468	38,097	195,151,774	5,122
Foreign.....	3,130	348,369,239	17,899	3,336,581	4,745,423,280	1,422
1962						
Canadian.....	2,704	1,221,572,073	20,164	11,112,827	12,606,774,560	1,134
British.....	113	24,357,460	551	46,905	228,824,414	4,878
Foreign.....	2,910	336,899,180	17,934	3,765,010	5,213,553,366	1,385

7.—Insurance Death Rates in Canada, 1960-62

Type of Insurer	1960			1961			1962		
	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary.....	7,363,722	39,383	5.4	7,778,686	41,728	5.4	7,935,499	42,901	5.4
All companies, industrial.....	2,820,903	29,042	10.3	2,439,055	29,102	11.9	2,292,344	29,057	12.7
Fraternal benefit societies.....	503,631	4,154	8.3	482,395	4,248	8.8	486,537	4,067	8.4
Totals.....	10,688,256	72,579	6.8	10,700,136	75,078	7.0	10,714,380	76,025	7.1

Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 8 and 9 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising outside of Canada as well as in Canada.

8.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1960-62.

Assets and Liabilities	1960	1961	1962
	\$	\$	\$
Canadian Companies			
Total Assets¹.....	8,610,477,204	9,192,620,682	9,811,701,596
Bonds.....	4,030,635,953	4,230,778,406	4,406,499,653
Stocks.....	448,247,750	507,218,934	555,714,167
Mortgage loans on real estate.....	3,113,067,104	3,397,570,991	3,743,923,588
Agreements of sale of real estate.....	4,942,226	3,765,566	3,512,059
Real estate.....	282,892,192	297,128,710	304,103,625
Policy loans.....	431,676,229	453,973,133	476,525,931
Cash.....	70,481,884	87,816,509	83,011,556
Investment income, due and accrued.....	87,000,373	93,178,342	102,193,008
Outstanding insurance premiums and annuity considerations..	72,166,799	73,905,317	75,725,020
Shares of company's capital stock (purchased under mutualization plan).....	48,576,355	22,873,520	19,099,930
Other assets.....	20,790,339	24,411,254	41,893,059
Total Liabilities.....	8,079,533,701	8,615,294,163	9,187,473,406
Actuarial reserve for contracts in force.....	6,787,219,229	7,215,971,954	7,678,852,499
Amounts on deposit pertaining to contracts.....	651,158,732	703,505,689	754,200,963
Outstanding claims under contracts.....	69,521,291	76,416,994	80,100,665
Other liabilities.....	571,634,449	619,399,526	674,319,279
Surplus.....	512,877,050	557,540,660	607,392,331
Capital stock paid up.....	18,066,453	19,785,859	16,835,859
British Companies			
Assets in Canada².....	471,782,029	551,309,311	623,746,252
Bonds.....	272,527,602	300,467,547	340,868,997
Stocks.....	64,407,916	84,996,944	77,198,096
Mortgage loans on real estate.....	104,098,014	129,070,439	160,111,821
Real estate.....	12,562,089	15,808,174	19,679,296
Policy loans.....	9,542,965	10,668,212	11,798,349
Cash.....	1,888,192	2,662,733	3,531,247
Investment income, due and accrued.....	1,721,185	2,000,117	2,634,383
Outstanding insurance premiums and annuity considerations..	2,213,653	2,511,341	2,918,754
Other assets.....	2,820,413	3,123,804	5,005,309
Liabilities in Canada.....	436,254,716	502,023,947	563,941,164
Actuarial reserve for contracts in force.....	425,757,729	489,006,601	549,445,711
Outstanding claims under contracts.....	2,528,986	2,812,169	3,575,044
Other liabilities.....	7,968,001	10,205,177	10,920,409
Excess of assets over liabilities in Canada.....	35,527,313	49,285,364	59,805,088
Foreign Companies			
Assets in Canada².....	1,624,049,659	1,721,578,778	1,799,646,595
Bonds.....	1,126,180,644	1,179,089,631	1,212,682,813
Stocks.....	1,840,000	1,920,000	1,840,000
Mortgage loans on real estate.....	370,245,594	409,757,513	448,767,256
Real estate.....	6,762,180	6,706,778	6,452,347
Policy loans.....	73,930,490	78,286,854	81,478,818
Cash.....	16,811,266	15,618,067	17,292,824
Investment income, due and accrued.....	18,933,390	20,048,688	20,611,625
Outstanding insurance premiums and annuity considerations..	8,373,123	8,886,999	8,933,139
Other assets.....	972,972	1,264,248	1,587,773
Liabilities in Canada.....	1,458,457,809	1,528,542,691	1,604,248,722
Actuarial reserve for contracts in force.....	1,332,941,807	1,404,745,501	1,467,513,801
Outstanding claims under contracts.....	16,164,508	17,245,736	19,147,501
Other liabilities.....	109,351,494	106,551,454	117,587,420
Excess of assets over liabilities in Canada.....	165,591,850	193,036,087	195,397,873

¹ At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable).

² At market values.

9.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1960-62.

Revenue and Expenditure	1960	1961	1962
	\$	\$	\$
Canadian Companies			
Total Revenue	1,426,390,067	1,532,091,118	1,634,090,425
Insurance premiums and annuity considerations.....	995,635,251	1,060,250,335	1,120,269,350
Investment income.....	398,865,617	439,062,495	481,375,636
Sundry items.....	31,889,199	32,778,288	32,445,439
Total Expenditure	1,344,451,702	1,444,709,755	1,548,186,744
Claims incurred.....	513,649,249	540,804,416	572,056,264
Normal increase in actuarial reserve.....	390,370,013	426,277,286	465,387,915
Taxes, licences and fees.....	26,827,249	30,107,179	30,130,778
Commissions and general expenses.....	219,999,045	235,390,544	249,722,492
Sundry items.....	64,949,249	70,584,904	76,154,607
Dividends to policyholders.....	116,103,692	127,180,903	139,293,991
Increase in provision for profits to policyholders.....	12,553,205	14,364,523	15,440,697
Analysis of Increase in Surplus—			
Excess of revenue over expenditure.....	81,938,365	87,381,363	85,903,681
Net capital gain on investments.....	4,763,260	16,578,525	—7,099,234
Other credits to surplus (net).....	—25,450,094 ¹	—35,318,179 ¹	—10,396,264 ¹
Net increase in special reserves or funds.....	—13,147,221	—18,196,397	—13,698,955
Special increase in actuarial reserve.....	—5,831,944	—2,470,435	—2,566,340
Dividends to shareholders.....	—2,249,870 ²	—3,293,123 ²	—2,293,217 ²
Increase in surplus (policyholders and shareholders).....	40,022,496	44,681,754	49,851,671
British Companies			
Revenue in Canada	89,366,783	103,298,332	114,601,159
Insurance premiums and annuity considerations.....	66,846,296	76,872,177	82,146,635
Investment income.....	21,612,624	25,144,687	29,906,324
Sundry items.....	1,007,863	1,281,468	2,548,200
Expenditure in Canada	41,968,372	48,643,560	53,667,088
Claims incurred.....	22,579,102	24,130,823	28,129,362
Taxes, licences and fees.....	783,198	1,019,476	966,112
Commissions and general expenses.....	13,713,408	14,847,539	16,817,232
Other expenditure.....	919,424	1,189,895	1,523,438
Dividends to policyholders.....	3,973,240	7,455,827	6,230,924
Foreign Companies			
Revenue in Canada	308,304,438	324,386,707	344,544,290
Insurance premiums and annuity considerations.....	219,197,012	229,401,765	242,888,277
Investment income.....	75,944,843	80,765,032	86,410,033
Sundry items.....	13,162,583	14,219,910	15,245,980
Expenditure in Canada	217,634,311	232,317,535	252,397,524
Claims incurred.....	111,265,293	118,305,427	128,109,843
Taxes, licences and fees.....	6,572,120	7,359,836	9,455,446
Commissions and general expenses.....	55,365,523	55,995,768	58,015,357
Other expenditure.....	12,211,518	13,614,606	14,427,634
Dividends to policyholders.....	32,219,857	37,041,898	42,389,244

¹ Includes amounts written off shares purchased under mutualization plan.
than those purchased by the company under mutualization plan.

² Dividends on shares other

Subsection 4. —Life Insurance in Canada Transacted by Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table 10 gives statistics of life insurance in Canada transacted by fraternal benefit societies and Table 11 shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits

granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables 10 and 11 relate to the 16 Canadian societies registered by the federal Department of Insurance, only one of which does not grant life insurance benefits.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, though forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not been licensed previously by the provinces have since obtained federal authority to transact business.

10.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1960-62

Item	1960	1961	1962
Canadian Societies			
Premiums.....	\$ 6,028,137	6,420,343	6,564,923
Claims incurred.....	\$ 3,951,619	4,197,859	4,435,946
New certificates effected.....	No. 39,005	37,636	36,039
	\$ 120,969,865	125,982,733	118,675,589
Certificates in force Dec. 31.....	No. 303,899	309,189	311,446
	\$ 472,288,784	531,985,025	567,531,469
Certificates ceased by death or maturity.....	No. 2,840	3,069	3,034
	\$ 2,467,083	2,733,349	2,770,094
Foreign Societies			
Premiums.....	\$ 5,437,592	4,609,789	5,173,554
Claims incurred.....	\$ 3,176,578	2,587,711	2,707,101
New certificates effected.....	No. 12,575	10,916	11,481
	\$ 31,571,574	26,759,469	29,245,429
Certificates in force Dec. 31.....	No. 157,487	147,304	148,233
	\$ 230,069,059	207,507,569	222,328,090
Certificates ceased by death or maturity.....	No. 1,957	1,735	1,875
	\$ 2,012,444	1,702,662	1,828,257

11.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1960-62

Item	1960	1961	1962
	\$	\$	\$
Canadian Societies¹			
Assets.....	160,358,642	173,606,986	192,263,253
Bonds.....	114,313,863	124,777,449	132,951,478
Stocks.....	9,047,009	9,580,436	11,322,422
Mortgage loans on real estate.....	20,075,300	23,282,350	30,284,391
Agreements of sale of real estate.....	443,760	403,807	405,059
Real estate.....	3,692,995	3,596,287	3,607,453
Certificate loans and liens.....	5,751,393	6,730,608	7,360,999
Cash.....	1,657,089	2,297,974	2,419,145
Investment income, due and accrued.....	1,307,811	1,459,824	1,645,887
Outstanding premiums, contributions and dues.....	3,695,888	1,269,047	1,957,571
Other.....	373,536	209,204	308,848

¹ All funds, business in and out of Canada.

11.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1960-62—concluded

Item	1960	1961	1962
	\$	\$	\$
Canadian Societies¹—concluded			
Liabilities and Surplus.....	160,353,642	173,606,986	192,263,253
Actuarial reserve.....	118,670,883	128,964,130	140,845,711
Outstanding claims.....	1,216,545	1,535,805	1,457,825
Amounts on deposit.....	305,622	402,090	542,849
Other.....	23,426,201	23,662,356	28,431,567
Surplus.....	16,739,391	19,042,605	20,985,301
Revenue.....	34,140,059	38,289,664	44,342,262
Premiums, contributions and dues.....	26,339,367	29,834,982	34,794,396
Investment income.....	6,933,438	7,750,053	8,721,235
Other.....	867,254	704,629	826,631
Expenditure.....	31,766,735	35,506,483	40,812,433
Claims incurred.....	8,278,549	8,874,771	10,696,001
Increase in actuarial reserve.....	8,639,238	10,312,912	11,881,581
Taxes, licences and fees.....	91,758	108,759	96,869
Commissions.....	6,235,108	6,188,583	7,009,477
General expenses.....	5,451,876	6,356,590	6,694,172
Other.....	1,251,471	1,235,041	1,126,233
Dividends to members.....	1,580,526	1,775,035	2,695,021
Increase in provision for profits to policyholders.....	238,209	654,792	613,079
Analysis of Increase in Surplus—			
Excess of revenue over expenditure.....	2,373,324	2,783,175	3,529,829
Net capital gain on investments.....	-44,352	-1,107	86,014
Other credits to surplus (net).....	-39,018	15,296	82,211
Net increase in special reserves.....	186,854	-496,150	-1,759,769
Increase in surplus.....	2,476,808	2,301,214	1,938,285
Foreign Societies²			
Assets.....	59,000,951	52,552,293	52,906,594
Bonds.....	48,482,393	44,508,740	45,771,552
Mortgage loans on real estate.....	3,601,290	1,474,777	1,472,865
Real estate.....	952,595	952,595	—
Certificate loans and liens.....	3,503,118	2,542,856	2,623,076
Cash.....	1,387,213	1,846,928	1,791,091
Investment income, due and accrued.....	704,516	634,604	659,546
Outstanding premiums, contributions and dues.....	368,586	341,366	254,270
Other.....	1,240	250,427	334,194
Liabilities.....	47,978,741	41,683,461	43,769,029
Actuarial reserve.....	42,539,959	37,667,397	39,354,481
Outstanding claims.....	1,074,218	512,067	475,423
Other.....	4,364,564	3,503,997	3,939,125
Revenue.....	11,072,960	9,285,348	9,781,189
Premiums, contributions and dues.....	8,106,349	6,782,855	7,088,986
Investment income.....	2,459,448	2,120,999	2,303,665
Other.....	507,163	381,494	388,538
Expenditure.....	6,709,403	5,177,739	5,372,850
Claims incurred.....	4,364,521	3,484,887	3,554,448
Taxes, licences and fees.....	45,050	41,953	47,378
Commissions.....	782,795	524,638	569,707
General expenses.....	525,682	465,595	459,189
Other.....	410,323	196,978	215,839
Dividends to members.....	581,032	463,688	526,289

¹ All funds, business in and out of Canada.² All funds, business in Canada only.

Subsection 5.—Life Insurance Effectuated and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1961 and 1962 summary statistics of insurance effectuated and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The statistics for individual companies are shown in Table 12 and for individual currencies in Table 13. The data given in both of these tables are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies. Although these book rates of exchange do not follow the day-to-day fluctuations in the current rates of exchange, they are adjusted when necessary to keep them reasonably in line with the current rates.

Canadian life insurance companies operating under federal registration at Dec. 31, 1962 had life insurance in force amounting to \$15,119,095,790 in countries outside Canada, Insurance in force in currencies other than Canadian dollars amounted to \$15,091,047,886; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to \$35,907,032,820 at Dec. 31, 1962, and the total business on the books of these companies, in and out of Canada, amounted to \$51,026,128,610. Thus, about 30 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada.

In connection with their business outside Canada, the Canadian life insurance companies registered by the Federal Government held, at the end of 1962, Commonwealth and foreign investments in the amount of \$3,074,279,241.

12.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1961 and 1962.

Year and Company	Insurance Effectuated			Insurance in Force Dec. 31		
	Common-wealth Currencies	Foreign Currencies	Total	Common-wealth Currencies	Foreign Currencies	Total
	\$	\$	\$	\$	\$	\$
1961						
Alliance Mutual.....	—	742,484	742,484	—	3,742,699	3,742,699
Canada.....	58,145,956	148,128,305	206,274,261	371,142,033	934,040,108	1,305,182,141
Canadian Reassurance..	156,800	—	156,800	156,800	—	156,800
Commercial.....	—	—	—	—	43,011	43,011
Confederation.....	43,398,654	106,304,218	149,702,872	299,012,229	562,213,101	861,225,330
Continental.....	—	—	—	8,766	105,068	113,834
Crown.....	24,136,700	239,670,008	263,806,708	118,129,442	1,197,263,469	1,315,392,911
Dominion.....	8,013,093	42,350,775	50,363,868	36,824,563	263,699,680	300,524,243
Dom. of Canada General	—	—	—	1,748,500	1,000	1,749,500
T. Eaton.....	—	—	—	245,960	3,333	249,293
Equitable.....	—	—	—	—	51,030	51,030
Excelsior.....	42,000	50,000	92,000	42,000	116,904	158,904
Great-West.....	—	224,094,387	224,094,387	5,376	1,954,823,999	1,954,829,375
Imperial.....	52,190,951	4,335,150	56,526,101	228,708,556	46,755,435	275,463,991
London.....	—	1,920,762	1,920,762	—	9,901,920	9,901,920
Manufacturers.....	90,042,705	311,149,776	401,192,481	611,109,746	1,680,562,469	2,291,672,215
Maritime.....	8,542,290	128,421	8,670,711	10,118,493	713,619	10,832,112
Monarch.....	—	35,000	35,000	—	316,650	316,650
Montreal.....	—	11,500	11,500	91,106	257,015	348,121
Mutual.....	79,813	3,026,529	3,106,342	637,817	27,866,991	28,504,808
National.....	5,900,495	22,030,115	27,930,610	32,463,257	58,578,377	91,041,634
North American.....	19,852,667	99,099,942	118,952,609	87,474,278	397,840,408	485,314,686
Northern.....	—	6,536,360	6,536,360	19,500	37,430,131	37,449,631
Sauvegarde.....	—	—	—	—	5,000	5,000
Sun.....	170,085,339	327,222,684	497,308,023	1,235,146,394	3,627,262,011	4,862,408,405
Western.....	—	2,108,892	2,108,892	—	2,311,865	2,311,865
Totals, 1961.....	480,587,463	1,538,945,308	2,019,532,771	3,033,084,816	10,805,905,293	13,838,999,109

12.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1961 and 1962—concluded.

Year and Company	Insurance Effectuated			Insurance in Force Dec. 31		
	Common-wealth Currencies	Foreign Currencies	Total	Common-wealth Currencies	Foreign Currencies	Total
	\$	\$	\$	\$	\$	\$
1962						
Alliance Mutual.....	—	883,667	883,667	—	4,196,462	4,196,462
Canada.....	62,063,315	152,248,381	214,311,696	410,354,112	1,010,885,855	1,421,239,967
Canadian Reassurance..	106,857	20,920	127,777	213,712	20,920	234,632
Commercial.....	—	—	—	—	42,348	42,348
Confederation.....	47,322,073	137,681,050	185,003,123	325,853,153	673,619,714	999,472,867
Continental.....	—	—	—	6,333	109,161	115,494
Crown.....	28,374,974	241,552,479	269,927,453	132,305,526	1,342,029,113	1,474,334,639
Dominion.....	9,054,954	58,576,406	67,631,360	42,556,072	305,911,810	348,467,882
Dom. of Canada General	—	—	—	1,634,421	17,050	1,651,471
T. Eaton.....	102,000	—	102,000	331,460	3,333	334,793
Equitable.....	—	—	—	—	43,861	43,861
Excelsior.....	—	673,517	673,517	35,700	788,487	824,187
Great-West.....	—	287,118,686	287,118,686	—	2,135,887,395	2,135,887,395
Imperial.....	57,656,848	3,413,608	61,070,456	267,049,931	43,727,353	310,777,284
London.....	—	1,097,724	1,097,724	—	10,091,695	10,091,695
Manufacturers.....	95,901,258	354,691,958	450,593,216	671,244,298	1,894,203,374	2,565,447,672
Maritime.....	5,015,784	57,199	5,072,983	9,498,597	651,373	10,149,970
Monarch.....	—	27,317	27,317	—	276,094	276,094
Montreal.....	—	—	—	86,330	251,060	337,390
Mutual.....	—	3,143,731	3,143,731	618,589	28,908,019	29,526,599
National.....	7,087,887	25,780,247	32,868,134	36,680,554	79,472,904	116,153,458
North American.....	23,800,273	109,043,313	132,843,586	104,516,574	470,484,651	575,001,225
Northern.....	—	4,475,736	4,475,736	19,500	38,582,870	38,602,370
Sauvagarde.....	—	—	—	—	5,000	5,000
Sun.....	176,877,257	344,540,124	521,417,381	1,332,750,649	3,708,906,427	5,041,657,076
Western.....	—	4,988,431	4,988,431	—	6,176,055	6,176,055
Totals, 1962.....	513,363,480	1,730,014,494	2,243,377,974	3,335,755,502	11,755,292,384	15,091,047,886

Approximately 71 p.c. of all business in force in currencies other than Canadian is in United States currency and 17 p.c. is in sterling. From a slightly different point of view, approximately 22 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 78 p.c. in currencies of foreign countries.

13.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1961 and 1962.

Currency	1961		1962	
	Insurance Effectuated	Insurance in Force	Insurance Effectuated	Insurance in Force
	\$	\$	\$	\$
Commonwealth Currencies.....	480,587,463	3,033,084,816	513,363,480	3,335,755,502
Pounds—				
Sterling.....	353,440,966	2,376,071,155	384,620,474	2,612,726,900
Australia.....	—	17,630	—	4,367
British West Indies, Bahamas, Bermuda and Jamaica.....	29,665,049	156,624,619	27,422,251	172,266,917
Cyprus.....	2,708,737	6,750,293	4,103,462	10,328,648
Rhodesia and Nyasaland.....	20,819,460	120,440,547	34,461,798	140,604,622
Dollars—				
British Honduras.....	—	631,124	—	606,281
British West Indies, British Guiana and Trinidad.....	56,877,598	265,975,062	57,649,424	296,327,650
Hong Kong.....	2,687,807	16,038,436	2,347,425	17,960,760
Malaya.....	3,828,706	31,743,994	2,088,384	31,507,423

13.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1961 and 1962—concluded.

Currency	1961		1962	
	Insurance Effectuated	Insurance in Force	Insurance Effectuated	Insurance in Force
	\$	\$	\$	\$
Commonwealth Currencies—concluded				
Rupees—				
Ceylon.....	—	29,439,245	—	27,597,438
India.....	—	5,226,286	—	4,319,388
Pakistan.....	—	760,026	—	692,014
Shillings—				
East Africa.....	1,559,140	23,366,399	670,262	20,813,094
Foreign Currencies	1,538,945,308	10,805,905,293	1,730,014,494	11,755,292,384
Bahts (Thailand).....	—	21,489	—	12,743
Bolivars (Venezuela).....	5,008,921	38,558,588	11,261,591	43,694,159
Colones (El Salvador).....	678,000	806,600	—	801,000
Cordobas (Nicaragua).....	—	2,327	—	1,899
Dollars (United States of America).....	1,403,735,913	9,761,818,037	1,573,329,317	10,685,823,622
Francs (France).....	—	496	—	496
Francs (Switzerland).....	—	2,080	—	2,080
Guilders (Netherlands).....	—	279,897	3,100	253,297
Guilders (Netherlands Antilles).....	3,502,110	18,724,851	3,272,032	19,977,431
Kyats (Burma).....	—	74,751	—	55,301
Pesos (Argentina).....	—	3,262,104	—	1,497,367
Pesos (Chile).....	—	7	—	2
Pesos (Colombia).....	—	5,920	—	4,960
Pesos (Cuba).....	6,404,534	174,909,255	585,000	131,618,589
Pesos (Dominican Republic).....	4,117,731	18,159,789	4,965,850	22,587,966
Pesos (Mexico).....	20,000	3,644,998	26,000	3,337,259
Pesos (Philippines).....	14,142,361	91,731,990	12,445,908	74,875,278
Pounds (Egypt).....	—	12,840,472	—	10,336,652
Pounds (Republic of Ireland).....	12,519,473	73,073,113	15,873,828	86,543,015
Pounds (Israel).....	5,123,398	21,252,538	7,769,722	26,895,582
Rand (South Africa).....	83,692,867	586,339,344	100,482,146	646,662,121
Rupiahs (Indonesia).....	—	284,712	—	238,386
Soles (Peru).....	—	108,743	—	69,973
Yen (Japan).....	—	3,192	—	3,206
Totals	2,019,532,771	13,838,990,109	2,243,377,974	15,091,047,886

Section 2.—Fire and Casualty Insurance

At the end of 1962 there were 278 companies registered by the Federal Government to transact fire insurance in Canada (86 Canadian, 77 British and 115 foreign). Of these companies, 270 (80 Canadian, 77 British and 113 foreign) were also registered to transact casualty insurance. In addition, 96 companies were registered by the Federal Government to transact casualty insurance but not fire insurance (22 Canadian, 7 British and 67 foreign). Of the companies registered to transact fire and/or casualty insurance, 72 were also registered to transact life insurance; 14 of these were registered for fire, life and casualty insurance and 58 for life and casualty but not fire insurance. It should be noted also that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 25 registered fraternal benefit societies transacting accident and sickness insurance, of which 22 also transacted life insurance.

The operations analysed in the tables of this Section, with the exception of Table 14, include only those companies under federal registration. As shown in Table 14, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation but may be allowed to sell insurance in other provinces. Many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis.

Table 14 summarizes net premiums written and net claims incurred for the years 1961 and 1962 in the fields of fire insurance and casualty insurance in Canada. These data are presented on the basis of the supervising government authorities for the companies concerned. The table relates to insurance companies only; no data are included with respect to fraternal benefit societies.

14.—Fire and Casualty Insurance Transacted in Canada, 1961 and 1962

Item	1961		1962	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
Fire Insurance	\$	\$	\$	\$
Federally registered companies ¹	216,025,836	103,543,982	215,296,755	113,693,026
Provincial licensees.....	30,500,271	14,598,773	32,237,560	18,425,946
In province by which incorporated.....	27,213,600	13,046,406	28,805,278	16,110,691
Outside province by which incorporated.....	3,286,671	1,552,367	3,432,282	2,315,255
Lloyds, London.....	8,262,620	5,894,557	7,400,611	6,744,769
Totals, Fire¹.....	254,788,727	124,037,312	254,934,926	138,563,741
Casualty Insurance				
Federally registered companies ¹	607,131,010	354,194,688	649,530,458	399,990,133
Provincial licensees.....	61,288,316	32,614,086	70,000,749	43,504,385
In province by which incorporated.....	54,492,886	28,896,711	61,718,442	37,974,100
Outside province by which incorporated.....	6,795,430	3,717,375	8,282,307	5,530,285
Lloyds, London.....	29,074,480	14,550,397	29,141,562	15,859,655
Totals, Casualty¹.....	697,493,806	401,359,171	745,672,769	459,354,173
Totals, Fire and Casualty¹.....	952,282,533	525,396,483	1,003,607,695	598,217,914

¹ Registered or licensed reinsurance deducted from all companies. Prior to 1961, all reinsurance was deducted for Canadian companies included in the data of federally registered companies; these figures are therefore not strictly comparable with the same items in previous years.

Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1953 to 1962 are given in Table 15 and the figures for 1961 and 1962 are classified by province and nationality of company in Table 16.

15.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1953-62

(Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	\$	\$		\$	\$
1953.....	145,937,546	66,787,604	1958.....	177,364,450	88,151,837
1954.....	148,446,105	70,445,544	1959.....	196,702,991	96,054,754
1955.....	146,444,845	77,836,245	1960.....	200,735,958	100,501,460
1956.....	155,506,787	86,088,850	1961.....	200,859,825	96,343,611
1957.....	156,246,117	109,757,161	1962.....	200,768,495	104,472,605

16.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1961 and 1962

(Registered or licensed reinsurance deducted)

Year and Province or Territory	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$	\$	\$
1961						
Newfoundland.....	700,655	607,146	1,506,623	2,604,463	784,658	787,729
Prince Edward Island.....	276,980	77,928	411,300	138,225	153,704	58,663
Nova Scotia.....	2,546,162	949,660	3,389,883	1,166,002	1,892,292	643,880
New Brunswick.....	1,955,820	891,792	2,654,330	1,079,437	1,869,323	727,768
Quebec.....	22,590,765	8,956,096	23,637,309	11,770,032	22,417,686	11,809,338
Ontario.....	27,684,161	12,592,600	23,341,146	11,983,145	26,737,393	13,930,254
Manitoba.....	4,327,467	2,086,467	2,654,291	1,491,428	2,564,430	1,165,717
Saskatchewan.....	3,327,926	1,913,335	1,335,312	856,357	1,697,538	757,129
Alberta.....	5,017,024	1,760,306	4,298,009	1,886,466	3,970,312	1,847,725
British Columbia.....	5,863,221	2,482,998	7,181,925	2,851,653	8,589,261	3,261,278
Yukon and Northwest Territories...	166,920	133,127	374,036	195,383	107,974	80,455
Canada, 1961.....	74,457,101	32,451,455	70,784,164	36,022,591	70,784,571	35,069,936
1962						
Newfoundland.....	853,684	358,274	1,425,502	386,832	773,818	233,282
Prince Edward Island.....	307,409	133,770	409,326	164,951	173,331	62,131
Nova Scotia.....	2,544,503	1,294,766	3,196,012	1,706,109	1,799,603	915,390
New Brunswick.....	2,151,012	1,028,625	2,417,740	1,168,203	1,868,669	859,598
Quebec.....	22,911,722	12,916,228	22,500,816	13,947,772	22,848,113	11,330,934
Ontario.....	29,276,354	13,559,567	21,608,789	11,428,104	28,379,714	13,710,195
Manitoba.....	4,515,617	2,701,527	2,407,833	1,357,539	2,540,514	1,308,933
Saskatchewan.....	3,118,742	1,033,108	1,093,863	516,547	1,635,005	677,948
Alberta.....	5,069,494	2,539,536	3,823,988	2,971,779	3,847,533	2,597,275
British Columbia.....	6,219,877	3,716,551	6,561,858	3,767,675	8,305,630	5,012,241
Yukon and Northwest Territories...	172,143	66,427	409,612	190,848	128,929	30,361
Canada, 1962.....	77,140,557	39,348,379	65,855,339	37,606,359	72,300,859	36,738,288

Subsection 2.—Fire Losses

The information in Tables 17 to 19, which deals with the loss of property and life caused by fire, has been summarized from the annual report *Fire Losses in Canada* prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses not included in these figures in 1961 amounted to \$3,129,743 from 1,966 fires; average federal losses for the period 1952-61 amounted to \$4,945,019 from an annual average of 2,252 fires.

17.—Statistics of Fire Losses, 1952-61

NOTE.—Figures for 1926-46 are given in the 1947 Year Book, p. 1078, and those for 1947-51 in the 1960 edition, p. 1169. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire
	No.	\$	\$	No.		No.	\$	\$	No.
1952.....	64,103	80,902,205	5.60*	565	1957.....	82,088	133,492,277	8.04	638
1953.....	67,519	84,270,896	5.68*	477	1958.....	86,919	120,258,696	7.04	532
1954.....	68,638	91,440,478	5.98*	479	1959.....	84,241	124,532,238	7.12	560
1955 ²	76,066	102,767,776	6.55	569	1960.....	79,611	129,327,288	7.24	568
1956.....	80,746	106,772,153	6.64	601	1961.....	83,706	128,262,047	7.03	556

¹ Excludes forest fires and Federal Government property losses.² Newfoundland included from 1955.

The provincial property losses for 1958-61 given in Table 18 include both insured and uninsured losses.

18.—Fire Losses, by Province, 1958-61

Province or Territory	1958	1959	1960	1961		
	Property Loss ¹			Fires Reported	Property Loss ¹	Loss per Capita
	\$	\$	\$	No.	\$	\$
Newfoundland.....	4,726,783	2,409,232	1,421,354	820	5,535,260	12.09
Prince Edward Island.....	1,027,267	839,912	740,780	507	806,429	7.71
Nova Scotia.....	3,714,389	4,571,624	3,661,484	2,553	3,093,709	4.20
New Brunswick.....	3,191,935	3,726,872	4,766,055	2,081	3,667,612	6.13
Quebec.....	44,776,995	40,989,820	40,602,510	32,205	41,841,330	7.96
Ontario.....	35,655,789	40,819,944	42,163,599	25,922	40,773,492	6.54
Manitoba.....	3,782,329	4,502,141	6,080,983	4,029	4,884,668	5.30
Saskatchewan.....	3,980,048	3,280,579	3,132,065	2,138	4,741,201	5.12
Alberta.....	6,490,742	7,102,221	7,630,695	5,431	8,674,795	6.51
British Columbia.....	12,702,394	14,859,552	18,290,383	7,849	13,494,934	8.28
Yukon and Northwest Territories.....	210,025	1,430,341	837,399	171	748,617	19.90
Canada.....	120,258,696	124,532,238	129,327,288	83,706	128,262,047	7.63

¹ Excludes forest fires and Federal Government property losses.

19.—Fire Losses, by Type of Property and Cause of Fire, 1959-61

Type of Property and Reported Cause of Fire	1959		1960		1961	
	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ^{1,2}	Fires Reported	Property Loss ¹
	No.	\$	No.	\$	No.	\$
Type of Property						
Residential.....	63,294	28,654,218	59,079	29,674,618	62,096	33,108,236
Mercantile.....	6,553	35,408,540	6,210	37,059,794	6,828	42,119,107
Farm.....	5,906	11,926,439	5,383	10,577,827	6,766	13,176,606
Manufacturing.....	1,703	17,490,756	1,656	21,976,307	1,664	18,338,086
Institutional and assembly.....	1,050	8,143,459	1,076	6,564,462	1,232	7,204,244
Miscellaneous.....	5,735	22,908,826	6,207	22,052,926	5,120	14,315,768
Totals.....	84,241	124,532,238	79,611	129,327,288	83,706	128,262,047
Reported Cause						
Smokers' carelessness.....	34,028	5,914,818	31,037	6,559,352	32,659	6,693,799
Stoves, furnaces, boilers and smoke pipes.....	6,348	9,777,523	5,864	7,517,063	5,950	7,492,539
Electrical wiring and appliances.....	7,221	13,805,375	7,652	14,016,353	8,527	15,276,056
Matches.....	2,075	1,374,897	2,170	1,737,684	2,865	2,172,011
Defective and overheated chimneys and flues.....	3,144	3,427,013	2,734	2,739,957	2,833	2,958,347
Hot ashes, coals and open fires.....	1,484	1,455,764	1,322	1,025,169	2,022	1,882,717
Petroleum and its products.....	1,168	2,935,370	1,250	2,747,507	1,337	2,963,510
Lights, other than electric.....	1,497	1,788,180	1,558	1,982,009	1,430	1,203,066
Lightning.....	2,525	2,012,439	2,582	1,679,481	3,199	2,259,427
Sparks on roofs.....	442	710,105	412	572,361	509	540,627
Exposure fires.....	663	1,654,976	569	1,163,810	685	1,891,142
Spontaneous ignition.....	377	2,018,170	391	4,357,236	345	1,015,416
Incendiarism.....	501	3,337,622	481	2,056,656	558	3,168,047
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.).....	10,727	9,679,196	10,076	12,705,978	7,788	9,852,449
Unknown.....	12,041	64,640,790	11,513	68,466,672	12,999	68,892,894

¹ Excludes forest fires and Federal Government property losses.

² Addition not accurate; breakdown for Newfoundland not complete.

Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 20. These figures relate only to companies registered by the Federal Government.

20.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1961 and 1962

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Class of Business	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
1961						
Accident—						
Personal accident.....	4,236,897	2,559,373	6,610,074	13,406,344	12,909,452	5,523,209
Public liability.....	12,132,917	10,100,481	10,909,234	33,142,632	31,508,078	15,536,046
Employers' liability.....	2,273,310	2,696,835	1,349,057	6,319,202	6,241,689	2,888,714
Combined accident and sickness.....	72,354,121	1,439,575	87,468,490	161,262,186	161,794,996	108,988,735
Aircraft.....	337,114	3,019,344	2,768,865	6,125,323	5,808,721	1,885,474
Automobile.....	130,469,907	63,765,520	92,442,261	286,677,688	283,555,970	174,069,491
Boiler—						
Boiler.....	2,657,517	858,773	1,386,129	4,902,419	4,815,290	1,270,198
Machinery.....	1,094,478	254,355	1,037,528	2,386,361	2,595,061	1,035,569
Credit.....	161,994	—	732,861	894,855	905,913	610,343
Earthquake.....	11,728	18,920	6,303	36,951	38,622	65
Explosion.....	12	825	434	1,271	1,171	5
Forgery.....	48,079	9,741	18,618	76,438	88,308	23,731
Guarantee—						
Fidelity.....	1,860,906	847,079	1,892,476	4,600,461	4,318,476	1,704,996
Surety.....	4,097,395	906,289	2,948,392	7,952,076	7,533,945	1,734,497
Hail.....	165,052	158,858	1,672,081	1,995,991	1,991,383	601,465
Inland transportation.....	1,114,124	1,503,722	3,527,886	6,145,732	6,291,463	2,714,490
Livestock.....	2,465	93,413	123,061	218,939	199,300	116,706
Personal property.....	11,289,549	13,969,178	18,996,062	44,254,789	42,392,429	22,311,630
Plate glass.....	1,183,838	876,812	738,797	2,799,447	2,775,160	1,357,380
Real property.....	425,666	620,532	635,097	1,681,295	1,495,972	278,885
Sickness.....	275,223	501,989	1,273,602	2,050,814	2,028,016	917,976
Sprinkler leakage.....	76	569	106	751	644	1,201
Theft.....	2,783,316	2,180,905	2,727,011	7,691,232	7,382,697	3,932,812
Title.....	—	—	17,907	17,907	16,305	—
Water damage.....	—	—	4,450	4,450	1,779	—
Weather.....	—	—	17,649	17,649	17,807	3,749
Windstorm.....	92,200	468	29,098	121,766	143,880	21,333
Totals, 1961.....	249,067,884	106,383,556	239,333,529	594,784,969	586,852,527	347,528,700
1962						
Accident—						
Personal accident.....	4,713,500	2,829,439	7,806,436	15,349,375	14,647,750	6,346,792
Public liability.....	12,862,865	10,557,951	12,180,726	35,601,542	33,788,331	16,823,718
Employers' liability.....	2,390,813	2,748,378	1,408,991	6,548,182	6,366,955	2,811,241
Combined accident and sickness.....	79,228,327	1,434,108	91,682,766	172,345,201	171,615,160	119,842,709
Aircraft.....	395,093	3,222,497	2,597,180	6,214,770	6,125,733	2,693,833
Automobile.....	138,527,539	70,379,707	96,173,816	305,081,062	298,479,544	200,402,065
Boiler—						
Boiler.....	3,187,262	1,062,800	1,689,733	5,939,795	5,230,341	591,374
Machinery.....	1,369,687	249,104	883,833	2,502,604	2,407,384	935,971
Credit.....	156,781	—	676,082	832,863	846,635	480,657
Earthquake.....	11,331	23,562	42,064	76,957	57,952	228
Explosion.....	215	103	100	418	774	—12
Forgery.....	56,294	12,260	75,914	144,468	124,258	29,388
Guarantee—						
Fidelity.....	1,890,750	964,777	1,648,138	4,503,665	4,420,226	2,253,885
Surety.....	4,427,036	951,575	3,614,447	8,993,058	8,461,849	848,663
Hail.....	318,777	470,464	3,433,908	4,223,149	4,237,613	4,028,261
Inland transportation.....	1,240,233	1,634,425	3,492,996	6,367,654	6,358,280	3,132,906

**20.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred
in Canada, 1961 and 1962—concluded**

Class of Business	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
1962—concluded						
Livestock.....	2,338	146,447	125,173	273,958	250,969	136,328
Personal property.....	13,894,940	13,251,364	19,695,867	46,842,171	44,478,118	24,011,507
Plate glass.....	1,156,801	862,005	804,250	2,823,056	2,802,142	1,453,805
Real property.....	524,240	620,963	621,289	1,766,472	1,667,575	609,857
Sickness.....	269,701	498,950	1,505,865	2,274,516	2,260,536	812,899
Sprinkler leakage.....	40	51	25	116	530	—526
Theft.....	2,877,093	2,299,042	2,807,020	7,983,155	7,694,175	3,926,467
Title.....	—	—	92,699	92,699	83,707	511
Water damage.....	—	—	—1,720	—1,720	1,920	300
Weather.....	—	—	8,314	8,314	8,342	4,170
Windstorm.....	109,842	475	14,414	124,731	129,346	45,272
Totals, 1962.....	269,611,478	114,220,447	253,080,306	636,912,231	622,545,745	392,222,269

**Subsection 4.—Finances of Companies Transacting Fire and Casualty
Insurance under Federal Registration**

The financial statistics of Tables 21 to 23 relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

**21.—Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal
Registration and Assets in Canada for Fire and Casualty Insurance of British and
Foreign Companies under Federal Registration, 1960-62.**

Assets	1960	1961	1962
	\$	\$	\$
Canadian Companies¹ (In and Out of Canada)			
Real estate.....	14,685,544	16,150,187	17,734,064
Mortgage loans and agreements of sale.....	8,411,087	13,424,558	21,111,018
Bonds and stocks.....	414,792,063	445,238,446	469,383,069
Agents' balances and premiums outstanding.....	44,282,392	48,275,455	47,608,149
Cash.....	35,682,176	36,101,126	31,510,035
Interest, dividends and rents, due and accrued.....	4,149,305	4,577,934	5,001,493
Other assets.....	25,296,882	31,217,271	37,314,369
Totals, Assets of Canadian Companies.....	547,299,449	594,984,977	629,662,197
British Companies (In Canada)			
Real estate.....	2,940,796	2,774,290	4,138,742
Mortgage loans and agreements of sale.....	1,499,652	2,275,289	2,537,268
Bonds and stocks.....	258,549,746	268,301,989	278,740,925
Agents' balances and premiums outstanding.....	29,341,827	30,913,028	30,413,022
Cash.....	14,167,723	13,551,803	12,862,711
Interest, dividends and rents, due and accrued.....	2,144,419	2,191,833	2,563,701
Other assets in Canada.....	7,440,158	6,786,813	7,217,998
Totals, Assets of British Companies (In Canada)...	316,084,321	326,795,025	337,974,367

¹ Includes marine insurance.

21.—Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1960-62—concluded.

Assets	1960	1961	1962
	\$	\$	\$
Foreign Companies (In Canada)			
Real estate.....	4,239,149	4,237,769	4,338,956
Mortgage loans and agreements of sale.....	64,890	50,668	50,214
Bonds and stocks.....	377,248,850	403,748,469	410,947,863
Agents' balances and premiums outstanding.....	32,462,204	33,656,628	33,957,410
Cash.....	28,281,262	31,064,419	27,861,447
Interest, dividends and rents, due and accrued.....	4,177,035	4,479,204	4,686,658
Other assets in Canada.....	6,656,599	8,969,620	12,348,098
Totals, Assets of Foreign Companies (in Canada)...	453,129,989	486,206,777	494,190,646

22.—Total Liabilities for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1960-62.

Liabilities	1960	1961	1962
	\$	\$	\$
Canadian Companies¹ (In and Out of Canada)			
Reserve for unsettled claims.....	118,958,135	128,672,289	145,750,446
Reserve of unearned premiums.....	146,337,672	149,512,395	157,530,968
Other policy reserves.....	10,242,936	10,771,213	11,115,519
Sundry items.....	69,828,616	81,810,556	78,899,846
Investment, contingency or general reserve funds.....	24,611,358	27,631,165	29,014,448
	369,878,717	398,397,618	422,311,227
Capital stock paid.....	39,800,384	40,935,371	43,139,460
Amounts transferred from other funds.....	4,432,146	4,781,462	7,797,462
Surplus.....	133,188,202	150,870,526	156,414,048
Totals, Liabilities of Canadian Companies.....	547,299,449	594,984,977	629,662,197
British Companies (In Canada)			
Reserve for unsettled claims.....	74,601,018	70,329,870	80,887,140
Reserve of unearned premiums.....	106,847,239	107,501,174	107,229,340
Other policy reserves.....	1,803,029	1,827,788	1,886,752
Sundry items.....	15,725,395	15,217,840	14,882,342
Totals, Liabilities of British Companies (in Canada).....	198,976,681	194,876,672	204,865,574
Excess of assets over liabilities in Canada.....	117,107,640	131,918,353	133,108,793
Foreign Companies (In Canada)			
Reserve for unsettled claims.....	98,677,268	102,605,955	110,437,647
Reserve of unearned premiums.....	147,331,762	149,161,348	154,243,652
Other policy reserves.....	13,942,772	14,817,158	16,163,517
Sundry items.....	28,328,797	29,628,220	29,675,353
Totals, Liabilities of Foreign Companies (in Canada).....	288,280,599	296,212,681	310,520,169
Excess of assets over liabilities in Canada.....	164,849,390	189,994,096	183,670,477

¹ Includes marine insurance.

23.—Profit and Loss Account of Canadian Companies and Gain or Loss and Other Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1960-62.

Item	1960	1961	1962
	\$	\$	\$
Profit and Loss Account—Canadian Companies (In and Out of Canada)			
Underwriting Gain	11,808,158	14,105,882	-2,662,163
<i>Add:</i> Interest, dividends and rents.....	18,420,668	20,702,695	22,621,366
Received from shareholders ¹	5,125,067 ^r	3,088,744	6,095,089
Gain in market value of investments.....	8,914,062	3,384,290	-405,394
Gain on sale of investments.....	1,310,248	1,859,795	1,918,500
Gains from other sources.....	3,509,976 ^r	1,651,028	2,108,658
<i>Deduct:</i> Investments written down.....	234,129	253,468	442,384
Dividends to policyholders.....	2,278,764	3,343,001	3,980,564
Income taxes.....	8,920,933	9,064,074	4,340,854
Losses from other sources.....	9,560,299 ^r	8,094,145	6,299,762
Dividends to shareholders.....	3,731,384	3,641,432	3,779,659
Net Gain	24,362,670	20,396,314	10,832,833
Gain or Loss and Other Income—British Companies (In Canada)			
Underwriting Gain	4,180,420	5,637,944	-5,559,989
<i>Deduct:</i> Dividends to policyholders.....	—	15,767	—
Income taxes.....	555,617	911,676	639,831
Net Gain or Loss	3,624,803	4,710,501	-6,199,820
<i>Other Revenue—</i> Interest, dividends and rents.....	8,486,465	9,541,432	10,385,663
Sundry income.....	702	1,088	18,971
Gain or Loss and Other Income—Foreign Companies (In Canada)			
Underwriting Gain	18,723,696	21,837,379	15,508,319
<i>Deduct:</i> Dividends to policyholders and others.....	5,105,842	6,151,328	5,747,684
Income taxes.....	5,392,510	5,016,802	3,257,199
Net Gain or Loss	8,225,344	10,669,249	6,503,436
<i>Other Revenue—</i> Interest, dividends and rents.....	15,830,330	17,382,442	18,350,053
Sundry income.....	68,417	180,686	197,444

¹ Beginning 1960, includes transfers to or from life branch.

Section 3.—Government Insurance

Federal Government Insurance

For more than fifty years the Federal Government has operated an annuity service, instituted to assist Canadians to make provision for old age; this service is described below. In addition, various insurance schemes have been adopted in recent years by the Federal Government or co-operatively by the federal and provincial governments. Information on unemployment insurance, health insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

Government Annuities.*—The Government Annuities Act (RSC 1952, c. 132) was passed in 1908 and is administered by the Minister of Labour.

A Canadian Government annuity is a fixed yearly income purchased from and paid by the Government of Canada. The annuity is payable in monthly instalments for life, or for life and guaranteed for a period of years. The minimum annuity is \$10 and the maximum \$1,200 a year or the actuarial equivalent if the annuity is to reduce by the amount of payments under the Old Age Security Act. Annuity contracts may be deferred or immediate. Deferred annuities are purchased by periodic or single premiums. Immediate annuity contracts provide immediate income. Annuities may be arranged to reduce by \$65 a month at age 70 to fit in with payments under the Old Age Security Act.

The property and interest of the annuitant are neither transferable nor attachable. In the event of the death of the annuitant before a deferred annuity vests, all money paid is refunded with interest. Provision is made in the Act for group annuity contracts whereby employers may contract for the purchase of annuities on behalf of their employees, or associations on behalf of their members, the purchase money being derived partly from wages and partly from employer contributions or entirely from employer contributions. Group annuity plans now in effect cover a variety of industries and many municipal corporations throughout Canada. Annuities arising from individual contracts may be taxable in either of two ways: (1) if registered under Sect. 79B of the Income Tax Act for tax exemption on premiums, the annuity is fully taxable, or (2) if not registered the annuity is taxable on the interest portion only. Annuities arising from registered pension plans are fully taxable but the employee and the employer are entitled to tax exemption year by year on their annual contributions to the pension plan.

From Sept. 1, 1908, the date of the inception of the system, to Mar. 31, 1963, the total number of annuity contracts and certificates issued, excluding replacements, was 525,284. On the latter date, 88,379 annuities were being paid amounting to \$49,118,134 annually and 293,358 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1963 was \$1,350,459,405. At that date there were in force 1,437 pension plans underwritten by government annuities, providing 203,742 employees with portable pensions; approximately 23,000 retired employees were receiving pensions. The number of certificates issued during the year was 3,687 compared with 7,480 in 1961-62.

* Revised in the Government Annuities Branch, Department of Labour, Ottawa.

24. —Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1959-63, with Cumulative Totals for 1909-63

Year Ended Mar. 31—	Individual Contracts Issued	Group Certificates Issued	Total Contracts and Certificates Issued	Net Receipts
	No.	No.	No.	\$'000
1909-58.....	182,147	269,906	452,053	1,102,778
1959.....	5,306	18,043	23,349	63,017
1960.....	4,378	11,564	15,942	56,041
1961.....	4,353	10,007	14,360	48,523
1962.....	4,117	7,480	11,597	43,097
1963.....	4,296	3,687	7,983	37,003
Totals, 1909-63.....	204,597	320,687	525,284	1,350,459

25.—Government Annuity Account Statements, Years Ended Mar. 31, 1959-63

Item	1959	1960	1961	1962	1963
Assets	\$	\$	\$	\$	\$
Fund at beginning of fiscal year.....	1,047,641,226	1,105,825,076	1,156,867,225	1,199,122,929	1,235,303,906
Receipts during the year, less payments.....	58,183,850	51,042,149	42,255,704	36,180,977	29,132,237
Fund at end of fiscal year.....	1,105,825,076	1,156,867,225	1,199,122,929	1,235,303,906	1,264,436,143
Liabilities					
Value of outstanding contracts.....	1,105,825,076	1,156,867,225	1,199,122,929	1,235,303,906	1,264,436,143
Receipts					
Immediate annuities.....	5,782,225	3,991,755	2,813,068	2,465,933	1,468,984
Deferred annuities.....	57,783,026	52,533,797	46,063,783	41,007,852	36,063,164
Interest on fund.....	40,710,603	42,805,366	44,584,055	46,010,743	47,414,303
Amount transferred to maintain reserve.....	157,565	189,340	—	—	—
Totals, Receipts.....	104,433,419	99,520,258	93,460,906	89,484,528	84,946,451
Payments					
Payments under vested annuity contracts.....	41,177,423	43,286,202	44,985,028	46,927,513	48,854,763
Return of premiums with interest.....	3,915,022	4,114,357	4,610,426	5,189,647	5,538,438
Return of premiums without interest.....	1,152,124	1,075,438	939,012	872,639	961,182
Unclaimed annuities transferred to Consolidated Revenue Fund, net.....	5,000	2,112	36,311	21,179	42,531
Surplus transferred to Consolidated Revenue Fund.....	—	—	634,425	292,573	417,300
Totals, Payments.....	46,249,569	48,478,109	51,205,202	53,303,551	55,814,214

26.—Numbers and Values of Annuity Contracts, as at Mar. 31, 1962 and 1963

Classification	1962			1963		
	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force
	No.	\$	\$	No.	\$	\$
Vested ordinary.....	42,325	18,691,869	151,860,809	43,540	19,529,333	157,424,941
Vested guaranteed.....	33,370	19,222,648	209,091,083	33,926	19,497,254	210,743,955
Vested last survivor.....	3,717	1,966,208	24,198,245	3,637	1,933,717	23,521,426
Vested reducing at age 70...	6,791	7,435,821	51,649,098	7,276	8,157,830	55,402,932
Deferred.....	307,231	¹	798,504,671	293,358	¹	817,342,889
Totals.....	393,434	47,316,546	1,235,303,906	381,737	49,118,134	1,264,436,143

¹ Undetermined.

Provincial Government Insurance

Saskatchewan.—The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1962 amounted to \$8,165,620 and earned surplus to \$142,685. The total amount made available to the Government of Saskatchewan since the beginning of government insurance operations in 1945 to Dec. 31, 1962, was \$4,274,339. Assets at the latter date were \$17,805,774, of which more than \$11,000,000 were invested in bonds and debentures issued by Saskatchewan schools, municipalities, hospitals, and the province. Over 600 independent insurance agents sell government insurance throughout the province.

The Automobile Accident Insurance Act, which became effective Apr. 1, 1946, is administered by the Saskatchewan Government Insurance Office. It establishes a compulsory automatic insurance plan designed to provide a reasonable minimum of compensation for losses arising from motor vehicle accidents regardless of fault. It also provides public liability insurance, with limits of \$10,000/\$20,000 for bodily injury and \$5,000 for property damage, as well as comprehensive and collision coverage subject to a \$200 deductible for private passenger cars. Rates vary from \$4 a year for trucks to \$49 for late-model private passenger cars, and also vary for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1962, more than \$61,000,000 were paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Office Librarian, Saskatchewan Government Insurance Office, Regina, Sask.

Alberta.—Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. While both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Further information on provincial insurance matters may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

Section 4.—Pension Plans

Very few pension plans in Canada have been in existence for more than 25 years and most of the older plans were installed by governments and financial institutions, such as banks. Employers in industry began showing an interest in pension plans for their employees shortly before World War II and from that time on there was a rapid increase in the rate at which plans were introduced.

Up to 1948 the majority of employers made arrangements with either the Annuities Branch of the Department of Labour (see pp. 1096-1097) or an insurance company for the underwriting of their plans. Then began the use of the facilities of corporate trustees (trust companies) to handle pension moneys, and by 1953 the amount of funds under control of such trustee plans had become a significant factor in the capital market and a growing form of savings. Trustee pension funds are also managed by individual trustees appointed by the employer or through a Pension Fund Society, which is a body incorporated under federal or provincial pension fund societies Acts, companies Acts, etc.

Table 27 shows the distribution of pension business for the years 1957-61.

27.—Distribution of Pension Business between Trustee Funds, Life Insurance Company Annuities and Government Annuities, 1957-61

Item and Year		Trustee Pension Plans	Life Insurance Group Annuities	Federal Government Group Annuities	Total
Plans—					
1957.....	No.	548	4,355	1,478	6,381
1958.....	"	841	4,985	1,540	7,366
1959.....	"	986	5,850	1,568	8,404
1960.....	"	1,140	6,564	1,556	9,260
1961.....	"	1,363	7,305	1,513	10,181
Plan Members—					
1957.....	No.	817,798	338,440	179,000	1,335,238
1958.....	"	944,936	392,853	192,000	1,529,789
1959.....	"	993,677	423,484	204,000	1,621,161
1960.....	"	1,009,127	469,339	205,000	1,683,466
1961.....	"	1,084,842	501,060	204,000	1,789,902
Contributions—					
1957.....	\$'000,000	284	106	40	430
1958.....	"	345	126	41	512
1959.....	"	379	152	36	567
1960.....	"	393	146	30	569
1961.....	"	436	157	25	618
Assets (book value)—					
1957.....	\$'000,000	2,298	756	495	3,549
1958.....	"	2,791	894	525	4,210
1959.....	"	3,200	1,062	560	4,822
1960.....	"	3,616	1,208	600	5,424
1961.....	"	4,074	1,397	610	6,081

Pension trust funds derive their income from employer and employee contributions, investment income and profit on the sale of securities. Expenditures arise from pension payments, pensions purchased from an underwriter on retirement or separation, cash withdrawals on death or separation, administrative costs and losses on the sale of securities. The funds are invested in federal, provincial, municipal and corporate bonds, stocks, mortgages, real estate and lease-backs. In recent years corporate trustees have introduced the "pooled" or "classified" type of fund, which enables small plans to have their assets combined so that each fund participates in the diversity, security and yield previously available only to the much larger single funds. The trustees of a fund, whether corporate or individuals, may also purchase mutual funds.

Table 28 shows the various types of trustee funds and the income, expenditures and assets of the funds in 1960 and 1961.

28.—Trusteed Pension Plans, Income, Expenditures and Assets, 1960 and 1961

Item		1960	1961
Trusteed plans.....	No.	1,140	1,363
Funded Trusts—			
Corporate trustee (trust co.) pooled funds.....	No.	377	500
“ “ “ mutual funds.....	“	81	124
“ “ “ individually managed.....	“	352	393
“ “ “ pooled or mutual funds and individually managed.....	“	93	93
Individual trustees.....	“	195	211
Corporate trustee (trust co.) pooled funds, and individual trustees.....	“	6	6
Pension fund societies.....	No.	36	36
Contributory funds.....	“	846	1,004
Non-contributory funds.....	“	284	359
Non-retired employees covered by funds.....	“	1,009,127	1,084,842
Pooled funds.....	“	476	599
Investment in pooled funds.....	\$'000,000	71.8	117.3
Mutual funds.....	No.	87	130
Investment in mutual funds.....	\$'000,000	34.5	44.2
Income—			
Contributions.....	\$'000,000	393	436
Employer.....	“	232	254
Employee.....	“	161	182
Investment.....	“	154	180
Net profit on sale of securities.....	“	2	4
Other.....	“	6	4
Totals, Income.....	\$'000,000	555	624
Expenditures—			
Pension payments out of funds.....	\$'000,000	108	124
Cost of pensions purchased.....	“	5	4
Cash withdrawals.....	“	30	34
Administration costs.....	“	1	2
Net loss on sale of securities.....	“	8	12
Other expenditures.....	“	2	2
Totals, Expenditures.....	\$'000,000	154	178
Assets (book value)—			
Investment in pooled funds, equity and fixed income funds, mutual funds.....	\$'000,000	106	161
Bonds—			
Bonds of, or guaranteed by, Government of Canada.....	\$'000,000	654	602
Bonds of, or guaranteed by, provincial governments.....	“	1,114	1,310
Bonds of Canadian municipal governments, school boards, etc.....	“	389	440
Other Canadian bonds.....	“	623	680
Non-Canadian bonds.....	“	4	9
Stocks—			
Canadian stocks, common.....	\$'000,000	232	324
Canadian stocks, preferred.....	“	27	18
Non-Canadian stocks, common.....	“	23	51
Non-Canadian stocks, preferred.....	“	1	1
Mortgages—			
Insured residential (NHA).....	\$'000,000	195	229
Other.....	“	105	112
Real estate and lease-backs.....	\$'000,000	29	33
Accrued interest.....	“	34	38
Accounts receivable.....	“	11	21
Cash-currency, bank and other deposits.....	“	68	44
Other assets.....	“	2	2
Totals, Assets.....	\$'000,000	3,616	4,074

¹ Less than \$500,000.

In 1960 there were approximately 9,600 pension plans in operation in Canada. Table 29 gives a distribution of 8,920 of these plans by number of members covered. It is estimated that there were about 38,000 members in the remaining 680 plans, or an average of 56 members per plan.

29.—Distribution of Pension Plans by Number of Members Covered, 1960

Number of Members	Plans	P.C. of Total	Number of Members	Plans	P.C. of Total
	No.			No.	
1 to 14.....	5,037	56.5	700 to 799.....	24	0.3
15 " 49.....	1,922	21.6	800 " 899.....	21	0.2
50 " 99.....	691	7.7	900 " 999.....	22	0.3
100 " 199.....	478	5.4	1,000 " 1,999.....	101	1.1
200 " 299.....	206	2.3	2,000 " 2,999.....	35	0.4
300 " 399.....	110	1.2	3,000 " 3,999.....	26	0.3
400 " 499.....	98	1.1	4,000 " 4,999.....	13	0.1
500 " 599.....	39	0.4	5,000 or over.....	55	0.6
900 " 699.....	42	0.5	Totals.....	8,920	100.0

In November 1960 there were 5,367,000 non-agricultural workers in the Canadian labour force, 2,672,724 or 50 p.c. of whom were employed by employers with an installed pension plan. These plans had 1,815,022 members, representing 34 p.c. of the labour force; the remainder of the 2,672,724 employees were outside the pension plan for one reason or another. Table 30 shows the employee and membership data of the plans for males and females separately.

30.—Employee and Membership Pension Plan Data, 1960

Item	Males	Per- centage of Male Em- ployees	Females	Per- centage of Female Em- ployees	Total	Per- centage of All Em- ployees	Percentage of Total	
							Male	Female
Members..... No.	1,421,857	73.8	393,165	52.8	1,815,022	67.9	73.3	21.7
Eligible employees who elected not to join.... "	193,926	10.0	90,593	12.2	284,519	10.7	68.2	31.8
Employees temporarily ineligible to join..... "	250,429	13.0	132,242	17.7	382,671	14.3	65.4	34.6
Employees permanently ineligible to join ¹ "	61,462	3.2	129,050	17.3	190,512	7.1	32.3	67.7
Totals, Employees on Payroll..... No.	1,927,674	100.0	745,050	100.0	2,672,724	100.0	72.1	27.9

¹ Because of age restriction or other factors, such as in plans with membership limited to males, females, salaried employees, hourly-paid employees, sales force, union members or executives.

In a pension plan the employer may make provision for an employee whose services are terminated before retirement to be credited with all or a portion of the contributions made by the employer on his behalf. The various degrees of vesting are as follows: (1) none; (2) immediate—all employer contributions are vested in the employee at the time they are paid; (3) deferred sudden—there is no vesting of employer contributions until the employee has fulfilled certain conditions, at which time all the employer contributions vest in the employee—vesting is usually determined on the number of years of service with the employer, the number of years of participation in the plan or the employee's age when his services are terminated, or any combination of these three factors; (4) deferred graduated—partial vesting commences when certain conditions as in (3) are fulfilled, with the scale of vesting graduated until it is complete.

Table 31 gives a distribution of the number of members of the 8,920 plans by the type of vesting.

31.—Distribution of Pension Plan Members by Type of Vesting, 1960

Type of Vesting	Plans	Male Members	Female Members	Total Members	Percentage
	No.	No.	No.	No.	
None.....	330	428,231	150,430	578,661	31.1
Immediate.....	2,612	72,748	15,405	88,153	4.7
Years of service only.....	2,925	610,225 ¹	158,864 ¹	769,089 ¹	41.3
Years of participation only.....	2,334	131,535	23,353	154,888	8.3
Age.....	9	311	257	568	—
Combination of service, participation, or age.....	710	220,158	51,164	271,322	14.6
Totals.....	8,920	1,463,208	399,473	1,862,681	100.0

¹ Includes Federal Government employees covered under the Public Service Superannuation Act and members of the Armed Forces covered under the Canadian Forces Superannuation Act.

The first column in Table 32 shows the distribution of the 8,920 plans by any one or combination of two or more methods of underwriting or trusteeship. Some contributory plans (the employees are required to contribute) which provide for the vesting of employer contributions on termination of employment also give the terminated employee the option of taking a cash refund. By exercising the right to a cash refund, the terminated employee may be obliged to waive his rights to the vested employer contributions. The second and third columns show the distribution of the 8,920 plans, depending upon whether or not the terminated employee waives his vested rights if he elects to take a cash settlement. The table also shows the total employee and employer contributions paid into pension funds during 1960.

32.—Method of Underwriting, Waiver of Vesting and Employee and Employer Contributions, 1960

Method of Underwriting	Plans	Waiver of Vesting		Employee Contributions in 1960	P.C. of Total	Employer Contributions in 1960	P.C. of Total
		Yes	No				
	No.	No.	No.	\$		\$	
Government annuities.....	734	—	734	2,661,888	0.8	3,552,506	0.8
Insurance company.....	6,400	3,294	3,106	58,045,675	17.3	68,572,350	14.7
Trust company.....	995	524	471	39,731,458	11.9	85,285,959	18.2
Individual trustees.....	295	131	164	114,881,831	34.3	163,297,999	35.0
Miscellaneous.....	16 ¹	7	9	90,294,601	27.0	107,530,057	23.0
Government annuities and insurance company.....	359	99	260	16,140,553	4.8	18,449,283	3.9
Government annuities and trust company.....	24	10	14	4,167,284	1.2	4,877,330	1.0
Government annuities and individual trustees.....	8	6	2	882,505	0.3	856,447	0.2
Insurance company and trust company.....	45	28	17	2,537,344	0.8	4,567,047	1.0
Insurance company and individual trustees.....	11	5	6	330,532	0.1	1,572,557	0.3
Trust company and individual trustees.....	3	2	1	108,976	—	1,244,145	0.3
Government annuities, insurance company and trust company.....	21	10	11	3,589,037	1.1	5,962,558	1.3
Government annuities, insurance company and individual trustees.....	7	4	3	1,378,498	0.4	1,355,030	0.3
Insurance company, trust company and individual trustees.....	2	1	1	1,595	—	6,217	—
Totals.....	8,920	4,121	4,799	334,751,777	100.0	467,129,485	100.0

¹ Includes federal Public Service Superannuation Act, Canadian Forces Superannuation Act and Royal Canadian Mounted Police Superannuation Act, plans for the provincial civil service for six provinces and plans for teachers in two provinces.

CHAPTER XXV.—DEFENCE OF CANADA

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE ARMED SERVICES AND DEFENCE RESEARCH*

Section 1.—The Department of National Defence

The control and management of all matters relating to national defence, the Canadian Forces and the Defence Research Board are the responsibility of the Minister and Associate Minister of National Defence; the duties and functions relating to national survival have also been assigned to the Department of National Defence with the Canadian Army undertaking the major role. The Canadian Forces consist of three Services, the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force. Each Service has an officer appointed as Chief of Staff who, subject to the regulations and under the direction of the Ministers, is charged with the control and administration of his Service. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel. The Chairman, Chiefs of Staff Committee is responsible to the Minister for ensuring that all matters of joint defence and defence policy, in their widest sense, are carefully examined and co-ordinated before decisions are made.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. The Deputy Minister is assisted by an Associate Deputy Minister. In addition, there are four Assistant Deputy Ministers each of whom administers a division of the Deputy Minister's branch responsible for: administration and personnel; construction, engineering and properties; finance; and supply. Also responsible to the Deputy Minister are: the Controller General of Inspection Services, the Judge Advocate General, the Chief Secretary, and the Director of Public Relations.

* Prepared in the Office of the Deputy Minister, Department of National Defence, Ottawa.

A number of committees meet at regular intervals to consider and advise on joint issues. These include:—

- (1) **Defence Council.**—Composed of the Minister of National Defence (Chairman), the Associate Minister (Vice Chairman), the Deputy Minister, the Chairman, Chiefs of Staff Committee, the three Chiefs of Staff, the Chairman, Defence Research Board, and the Associate Deputy Minister. Its purpose is to advise the Minister on administrative and other matters.
- (2) **Chiefs of Staff Committee.**—Composed of the Chairman, Chiefs of Staff, the Chiefs of Staff of the three Armed Services and the Chairman, Defence Research Board. The purpose of the Committee and its subcommittees is to maintain a continuous review of all operational problems.
- (3) **Personnel Members Committee.**—Composed of the Chief of Naval Personnel, the Adjutant-General, the Air Member for Personnel, the Assistant Deputy Minister (Finance) and a representative of the Chairman, Defence Research Board. The purpose of the Committee and its subcommittees is to examine personnel problems of the three Services with the general aim of achieving uniform personnel policies.
- (4) **Principal Supply Officers Committee.**—Composed of the Chief Naval Technical Services, the Quartermaster-General, the Air Member for Technical Services, the Assistant Deputy Minister (Requirements) and a representative of the Chairman, Defence Research Board. The purpose of the committee and its subcommittees is to deal with common problems in the field of supply and logistics.

Canada-United States Committee on Joint Defence.—This committee is composed of: for Canada, the Secretary of State for External Affairs, the Minister of National Defence and the Minister of Finance; for the United States, the Secretary of State, the Secretary of Defense and the Secretary of the Treasury; together with such other Cabinet members as either government may designate from time to time. Its function is to consult periodically on any matters affecting the joint defence of Canada and the United States; to exchange information and views at the ministerial level on problems that may arise, with a view to strengthening further the close co-operation between the two governments on joint defence matters; and to report on such discussions in order that consideration may be given to measures deemed appropriate and necessary to improve defence co-operation. Meetings normally alternate between Canada and the United States with the host country providing the chairman.

Liaison in Other Countries.—The Chairman, Chiefs of Staff, who is the Canadian military representative in the North Atlantic Treaty Organization, is responsible for co-ordinating all NATO military matters and acts as a military adviser to Canadian NATO delegations. For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Joint Staff (London) representing the three Services and the Defence Research Board in Britain, the Chairman of which is the principal military adviser to the Canadian High Commissioner in London, the principal military adviser to the Permanent Canadian Delegate to the NATO Council and the Canadian National Military Representative at SHAPE; (2) the Canadian Joint Staff (Washington) representing the three Services and the Defence Research Board in the United States, the Chairman of which is the principal military adviser to the Canadian Ambassador in Washington, the Canadian National Liaison Representative at SACLAN Headquarters and the Canadian member of the NATO Military Committee in Permanent Session; and (3) Service Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence.

Mutual Aid.—Canada's contributions to NATO are outlined on pp. 152-153.

Rates of Pay and Allowances.—The entire pay structure for comparable ranks in the different Services is on a uniform basis. Monthly rates of pay and allowances effective Oct. 1, 1962 are given in Table 1.

1.—Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1962

Royal Canadian Navy	Canadian Army	Royal Canadian Air Force	Basic Pay	Progressive Pay						Group Pay for Tradesmen and Specialists	Subsistence Allowance		Ration Allowance	Marriage Allowance	Separated Family's Allowance (personnel not in married quarters and with children)	
				Years in Rank							Personnel not in Receipt of Marriage Allowance	Personnel in Receipt of Marriage Allowance			In Receipt of Sub-sistence Allowance	Not in Receipt of Sub-sistence Allowance
				2	3	4	6	8								
									\$							
Ordinary Seaman (under 17 years)	Private (recruit under 17 years)	Aircraftman 2 (under 17 years)	\$ 60	—	—	—	—	—	—	\$ —	65	—	30	—	\$ —	\$ —
Ordinary Seaman (entry)	Private (recruit)	Aircraftman 2	112	—	—	—	—	—	—	—	65	100	30	30	65	100
Ordinary Seaman (trained)	Private (trained)	Aircraftman 1	119	—	—	—	—	—	—	—	65	100	30	30	65	100
Able Seaman	Private (higher rate)	Leading Aircraftman	138	—	21	—	27	—	—	Ranges from 12-90 according to group	65	100	30	30	65	100
—	Lance-Corporal	—	189	—	—	—	—	—	—		65	100	30	30	65	100
Leading Seaman	Corporal	Corporal	195	4	—	4	4	—	—		65	100	30	30	65	100
Petty Officer 2	Sergeant	Sergeant	219	5	—	5	5	—	—	—	75	105	30	30	75	105
Petty Officer 1	Staff Sergeant	Flight Sergeant	251	6	—	6	6	—	—	—	85	105	30	30	85	105
Chief Petty Officer 2	Warrant Officer 2	Warrant Officer 2	289	7	—	7	7	—	—	—	85	105	30	30	85	105
Chief Petty Officer 1	Warrant Officer 1	Warrant Officer 1	324	10	—	10	10	—	—	—	95	110	30	30	95	110

Paid to other ranks only.

1.—Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1962—concluded

Royal Canadian Navy	Canadian Army	Royal Canadian Air Force	Basic Pay	Progressive Pay					Group Pay for Tradesmen and Specialists ¹	Subsistence Allowance		Ration Allowance	Marriage Allowance	Separated Family's Allowance (personnel not in married quarters and with children)		
				Years in Rank						Personnel not in Receipt of Marriage Allowance	Personnel in Receipt of Marriage Allowance			In Receipt of Subsistence Allowance	Not in Receipt of Subsistence Allowance	
				2	3	4	6	8								
ROTP Cadet	ROTP Cadet	ROTP Cadet	\$ 73	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 65	\$ —	\$ 30	\$ —	\$ —	\$ —	
Acting Sub-Lieutenant	Second Lieutenant	Pilot Officer	235	—	—	—	—	—	—	—	75	110	30	40	75	110
Sub-Lieutenant	Lieutenant	Flying Officer	331	—	40	—	15	—	—	—	90	125	30	40	90	125
Commissioned Officer	Officer commissioned from S/Sgt or above	Officer commissioned from F/Sgt or above	408	15	—	15	15	15	—	—	75-95 ¹	110-125 ²	30	40	75-95 ²	110-125 ²
Lieutenant	Captain	Flight Lieutenant	428	20	—	20	20	20	—	—	95	125	30	40	95	125
Lieutenant-Commander	Major	Squadron Leader	555	25	—	25	25	25	—	—	113	135	30	40	113	135
Commander	Lieutenant-Colonel	Wing Commander	709	25	—	25	25	25	—	—	126	150	30	40	126	150
Captain	Colonel	Group Captain	899	40	—	40	—	—	—	—	139	165	30	40	139	165
Commodore	Brigadier	Air Commodore	1,164	50	—	—	—	—	—	—	153	180	30	40	153	180
Rear-Admiral	Major-General	Air Vice-Marshal	1,349	—	—	—	—	—	—	—	165	195	30	40	165	195

¹ Paid to other ranks only.² Depending on rank on promotion.

The allowances shown in Table 1 are explained briefly as follows.

Subsistence Allowance.—This allowance is granted whenever rations and quarters are not provided. A married man living with his family uses his subsistence allowance for their maintenance as well as his own.

Ration Allowance.—A ration allowance is granted when quarters are available but rations are not provided. It is not payable concurrently with subsistence allowance.

Marriage Allowance.—The amount of this allowance is \$30 a month for men and \$40 a month for officers, subject to a reduction of \$10 a month where permanent married quarters are occupied or \$2.50 a month where temporary married quarters are occupied. All ranks may draw this allowance upon marriage provided the initial training period has been completed and the age of 21 years has been attained by men and 23 years by officers.

Separated Family's Allowance.—An officer or man while separated from his dependants for any of various reasons (*i.e.*, movement of dependants prohibited, illness of dependants, lack of suitable accommodation), on being moved other than temporarily may be entitled to separated family's allowance at a rate and for a period depending on circumstances (*i.e.*, rank, reason for separation, whether or not he has children, whether or not his family is accommodated in married quarters, whether or not he is provided with quarters and rations). The rates listed are the maximum.

In addition to the above, *Foreign Allowances* of various kinds are granted to officers and men posted for duty outside Canada to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location. *Isolation Allowances* are granted to officers and men serving at specified isolated posts in Canada at rates depending upon location and circumstances. *Outfit Allowances and Clothing Credits* are as follows: Officers receive a single payment of \$450 on appointment and Warrant Officers Class I, \$270; men receive a free issue of clothing when they join and thereafter a monthly clothing credit or allowance of \$7, Navy Petty Officer 1st class and above receive \$8, and women \$8. An *Aircrew Allowance* of \$75 a month is paid to an officer or man undergoing flying training. For qualified aircrew this allowance may be increased to \$150, depending on rank, if filling an appointment requiring active and continuous flying duties, and to \$100, depending on rank, for maintaining proficiency. *Submarine Allowance* is granted an officer or man undergoing submarine training or filling an appointment in a submarine; the allowance varies from \$65 to \$115 a month depending on rank. An officer or man actively engaged or undergoing training as a parachutist or on flying or submarine duty and not entitled to aircrew allowance or submarine allowance is paid a *Risk Allowance* at the rate of \$30 a month. Medical, Dental and Legal Officers are granted extra allowances according to rank.

Subsection 1.—The Royal Canadian Navy

Role and Organization.—The role of the Royal Canadian Navy, in support of Canada's defence policy, is to maintain sea communications, to defend Canada against attack from the sea, to contribute to the collective defence of the NATO area against attack from the sea and to contribute naval forces to the United Nations as may be required. It is substantially an anti-submarine (A/S) role.

The Royal Canadian Navy comes under the central authority of the Chief of the Naval Staff at Naval Headquarters in Ottawa. The Flag Officer Atlantic Coast, at Halifax, N.S., and the Flag Officer Pacific Coast, at Esquimalt, B.C., exercise operational and administrative command of ships and establishments within the Atlantic and Pacific Coast Commands. The Flag Officers also hold the additional appointments of Maritime Commander Atlantic and Maritime Commander Pacific, respectively. As such, each is responsible for anti-submarine operations involving RCN and RCAF forces in his Command. The 21 Naval Divisions of the Royal Canadian Naval Reserve are under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton,

Ont. There are naval staffs in London, England, and Washington, D.C., U.S.A., to maintain liaison with the Royal Navy and the United States Navy. As a result of Canada's NATO commitments, officers of the Royal Canadian Navy serve on the staffs of: the Supreme Allied Commander, Atlantic, at Norfolk, Va., in the United States; the Commander-in-Chief, Eastern Atlantic Area, at Northwood in Britain; and the Commander-in-Chief, Western Atlantic Area, at Norfolk, Va. The Flag Officer Atlantic Coast holds the NATO appointment of Commander, Canadian Atlantic Sub-Area.

The strength of the RCN on Mar. 31, 1963, was 21,476 officers men and women in the regular force and 3,583 in the reserve force.

Operations at Sea, 1962-63.—During 1962, ships of the RCN spent more than 7,000 days at sea and logged over 1,200,000 nautical miles on exercises, training cruises and patrols. During the same year naval aviators flew over 5,000,000 nautical miles in 40,000 air hours, and made 4,269 day and night deck landings on board HMCS *Bonaventure*.

At mid-1963, three new Mackenzie class destroyer escorts had joined the fleet and three others were under construction in Canadian shipyards. A 22,000-ton fleet replenishment ship was nearing completion and the fitting of variable depth sonar and helicopter handling facilities in the first two St. Laurent class destroyer escorts was well under way. The first of nine CHSS-2 anti-submarine helicopters had been accepted. These will eventually replace the HO4S-3's and will be operated from the aircraft carrier *Bonaventure* and destroyer escorts.

Training.—At the end of 1962, the Navy had approximately 1,100 men taking new-entry training, 1,200 men undergoing other training in the various trade areas, and 532 cadets and 175 officers on courses. The major training establishments of the RCN are HMCS *Cornwallis* near Digby, N.S.; HMCS *Shearwater* near Dartmouth, N.S.; HMCS *Stadacona* at Halifax, N.S.; HMCS *Hochelaga* at LaSalle, Que.; HMCS *Gloucester* near Ottawa, Ont.; and HMCS *Naden* at Esquimalt, B.C.

Cadets entered under the Regular Officer Training Plan (ROTP) or College Training Plan (CTP) receive most of their early training at the Canadian Services Colleges or a Canadian university while those entered on a short-service appointment train in HMCS *Venture* at Esquimalt, B.C. All cadets receive practical training with the Fleet at various times of the year.

Men and women entering the RCN receive their basic training at HMCS *Cornwallis*; the courses are normally of 15 weeks duration.

A University Naval Training Division program is conducted to provide well-trained junior officers for the RCN and the RCN Reserve. The cadets are required to complete three winter-training periods, two summer-training periods and certain specified courses. In March 1963, there were 596 UNTD cadets at 26 Canadian universities and colleges.

Royal Canadian Naval Reserve.—The recruiting and training of officers and men of the RCN Reserve is conducted mainly through 21 Naval Divisions across Canada under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton, Ont. Naval Divisions are established in the following centres:—

St. John's, Nfld., HMCS *Cabot*
 Charlottetown, P.E.I., HMCS *Queen Charlotte*
 Halifax, N.S., HMCS *Scotian*
 Saint John, N.B., HMCS *Brunswick*
 Quebec, Que., HMCS *Montcalm*
 Montreal, Que., HMCS *Donnacona*
 Toronto, Ont., HMCS *York*
 Ottawa, Ont., HMCS *Carleton*
 Kingston, Ont., HMCS *Cataragui*
 Hamilton, Ont., HMCS *Star*

Windsor, Ont., HMCS *Hunter*
 London, Ont., HMCS *Prevost*
 Port Arthur, Ont., HMCS *Griffin*
 Winnipeg, Man., HMCS *Chippawa*
 Regina, Sask., HMCS *Queen*
 Saskatoon, Sask., HMCS *Unicorn*
 Calgary, Alta., HMCS *Tecumseh*
 Edmonton, Alta., HMCS *Nonsuch*
 Vancouver, B.C., HMCS *Discovery*
 Victoria, B.C., HMCS *Malahat*
 Prince Rupert, B.C., HMCS *Chatham*

Naval Divisions, commanded by Reserve officers, provide both basic and specialized training for officers and men of the RCN Reserve. The Great Lakes Training Centre at Hamilton conducts new-entry reserve training afloat during the summer months.

Royal Canadian Sea Cadets.—Royal Canadian Sea Cadets, sponsored by the Navy League of Canada and supported by the RCN, consist of 164 authorized corps. These are divided into seven Sea Cadet areas, supervised by 16 naval officers responsible to the Commanding Officer Naval Divisions. Instruction is carried out by RCSCC officers. Two RCSCC training establishments—*Acadia* on the East Coast and *Quadra* on the West Coast—accommodate officers and cadets for two-week training periods in the summer. In addition, selected Sea Cadets received seven-week training courses at naval establishments. Sea experience is provided for Cadets throughout the year in various types of ships of the RCN. In March 1963 the strength of the Corps was 1,114 Sea Cadet officers and 10,588 Sea Cadets.

Subsection 2.—The Canadian Army

Organization.—Army Headquarters at Ottawa is organized into four separate Branches. The General Staff Branch deals with all matters affecting the fighting efficiency of the Army, the Adjutant-General Branch deals with all problems affecting the soldier as an individual, the Quartermaster-General Branch is responsible for supply and the Comptroller-General Branch is responsible for financial management. The senior appointment at Army Headquarters is the Chief of the General Staff who, through the Heads of the four Branches, directs all activities of the Canadian Army. For command and control, Canada is divided into Commands and Areas with Headquarters as follows:—

<u>Command</u>	<u>Headquarters</u>	<u>Area and Headquarters</u>
Eastern Command.....	Halifax, N.S.....	(1) New Brunswick Area, Fredericton, N.B. (2) Newfoundland Area, St. John's, Nfld. (3) Nova Scotia-Prince Edward Island Area, Halifax, N.S.
Quebec Command.....	Montreal, Que.....	(4) Eastern Quebec Area, Quebec, Que.
Central Command.....	Oakville, Ont.....	(5) Eastern Ontario Area, Kingston, Ont. (6) Central Ontario Area, Oakville, Ont. (7) Western Ontario Area, London, Ont.
Western Command.....	Edmonton, Alta.....	(8) British Columbia Area, Vancouver, B.C. (9) Alberta Area, Edmonton, Alta. (10) Saskatchewan Area, Regina, Sask. (11) Manitoba Area, Winnipeg, Man.

The Canadian Army comprises the Canadian Army (Regular) and the Reserves. The Canadian Army (Regular) consists of a field force of four Infantry Brigade Groups, headquarters and administrative, training and logistic support units. One of the Infantry Brigade Groups is in Europe with the NATO Force and is under command of the Supreme Allied Commander in Europe. The Reserves include the Canadian Army (Militia), the Regular Reserve, the Supplementary Reserve, the Canadian Officers' Training Corps, the Cadet Services of Canada and the Reserve Militia. Additional to but not an integral part of the Canadian Army are the Services Colleges, officially authorized cadet corps, rifle associations and clubs.

The strength of the Canadian Army (Regular) at Mar. 31, 1963 was 49,760 officers and men and the strength of the Canadian Army (Militia) was 53,872, including personnel taking the special militia training courses.

Operations in 1962.—In fulfilment of military obligations under the North Atlantic Treaty, Canada has continued to provide ground forces for the defence of Western Europe.

The 4th Canadian Infantry Brigade Group, the major units of which are the Fort Garry Horse, the 3rd Regiment Royal Canadian Horse Artillery, No. 1 Surface-to-Surface Missile Battery, 1st Battalion, The Royal Canadian Regiment, the 1st Battalion, The Queen's Own Rifles of Canada, and the 2nd Battalion, The Black Watch (Royal Highland Regiment) of Canada, constituted the Canadian Army contribution to NATO at the end of the year. The headquarters of the Brigade Group is at Soest, and married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn.

The Canadian Army continued to provide forces in support of United Nations operations as follows. (1) A force of approximately 870 officers and men forms a part of the United Nations Emergency Force in the Middle East; its tasks are the patrolling of a sector of the Egypt-Israel International Frontier, the provision of engineer services, communications, stores, transport and workshop services, and postal facilities for the Force. (2) In the Congo, 57 Canadian Signal Unit, with a strength of approximately 310 officers and men, supports the United Nations force by the provision of communications, staff officers and other headquarters personnel; the bulk of the Unit is stationed in Leopoldville, with signal detachments at subordinate headquarters throughout the country. (3) Canadian Army contributions to United Nations commissions include some 30 officers employed in Kashmir, Korea and Palestine.

A specially trained and equipped infantry battalion is maintained on standby in Canada to provide at short notice a force for service in support of the United Nations in any part of the world. In addition to its United Nations commitments, the Canadian Army, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet Nam, Cambodia and Laos continues to provide approximately 75 officers and men for truce supervisory duties in Indo-China. During 1962, a Canadian Armed Forces Training Team was established in Ghana to assist in the training of the Ghana Armed Forces. The Canadian Army provides 23 of the members of this Team, the Royal Canadian Navy three, and the Royal Canadian Air Force four. An officer of the Royal Canadian Engineers is employed on map-making duties in Nigeria. A number of officer cadets from Nigeria and from Trinidad and Tobago have received training in Canadian Army schools.

Survival Operations.*—Since Sept. 1, 1959 the Army has been charged with certain civil defence responsibilities and is supported in this assignment by the Royal Canadian Navy and the Royal Canadian Air Force, the Defence Research Board providing assistance in research. (See also pp. 1121-1123).

A National Survival Attack Warning System has been established to give warning of an impending attack. A Canadian Army Liaison Officer is stationed at NORAD Headquarters and Canadian Army Sections are located in the appropriate NORAD Regional Headquarters in the United States and at Northern NORAD Regional Headquarters at North Bay. All of these have access to early warning information which enables them to keep a watch over friendly and enemy air traffic over Canada and the northern United States. Warning centres near Ottawa and in each province are manned 24 hours a day. Dissemination of alerts to the general public will be by siren signals and radio broadcasts over emergency networks in the provinces.

A Nuclear Detonation and Fallout Reporting System is being installed which, in the event of a nuclear detonation, will provide information needed to determine the areas likely to be affected by fallout. Information from this system will be passed to the public via the National Survival Attack Warning System. Provision has been made for an exchange of nuclear detonation and fallout data with the United States.

The Army also has the responsibility for re-entry into areas damaged by nuclear detonations or contaminated by serious radioactive fallout, decontamination work in those areas, and the rescue and provision of first aid to those trapped or injured. A headquarters responsible for planning re-entry operations has been established in the vicinity of each

* As at July 1963.

of 16 most probable target areas. Military personnel available will be used to form unit cadres which will employ large numbers of civilian volunteers to form rescue forces. These units will provide basic first aid and rescue, decontamination, casualty sorting, and certain traffic control and other services. Assistance and instruction will be given to those who remain in the damaged areas or in areas subjected to serious radioactive fallout. Planning is conducted in conjunction with all levels of civil government and agencies such as police, fire and health services.

Pamphlets have been distributed outlining the operating procedures for damage and casualty estimation and procedures have been evolved by which government agencies may use information provided by the Army to determine the resources remaining after an attack.

Planning of emergency communications has been completed by the Army and construction of the various stations is in progress

Training.—*Training Canadian Army (Regular).*—The policy of training is determined at Army Headquarters. General Officers Commanding Commands implement the training policies within their Commands except for that conducted at Army and corps schools under the supervision of Army Headquarters. During 1962, the basic training of 4,834 recruits and the corps training of officers and men of the Canadian Army was carried out at regimental depots, units and corps schools, and 9,736 personnel attended courses at the schools of instruction; 253 officers completed promotion qualification examinations for the rank of major and 138 officers for the rank of captain; six officers passed the entrance examinations for the Royal Military College of Science; 51 officers attended the Canadian Army Staff College and five commenced courses at Commonwealth Staff Colleges. Qualifying courses for junior NCO's were conducted under General Officers Commanding Commands and senior NCO courses were conducted at corps schools. Officers from the RCN and the RCAF as well as officers from Australia, Britain, Denmark, France, India, Italy, Pakistan, Turkey and the United States attended courses at Canadian Army schools of instruction.

English and French language training, which is available to all ranks of the Canadian Army, was conducted by Commands and AHQ. The R22eR Depot (Language Training Company) conducted six-month French language courses for English-speaking officers and NCO's and a number of French-speaking recruits and potential NCO's received English language training.

Trade and specialty training is given at corps schools and units. When required, the facilities of civilian schools are used to supplement training at Army establishments. Under an apprentice training program selected young men are trained as soldier tradesmen and prepared for advancement to senior non-commissioned ranks. During 1962 an additional 460 apprentices were enrolled and 44 civilian teachers were employed to provide academic instruction for about 800 apprentice soldiers. Academic credits are obtained from the educational authorities of the province where the training is conducted.

The training of the Field Force Canada airborne/air transportable element continued throughout 1962. Airborne continuation training was carried out by each unit in conjunction with unit exercises. Units carried out exercises during the winter under cold weather conditions. Parachute and air supply courses were conducted at the Canadian Joint Air Training Centre at Rivers, Man., and courses in Arctic training at Fort Churchill, Man. Collective training for units in Canada was carried out during the summer months at Camp Gagetown, N.B., and Camp Wainwright, Alta. All arms training comprised sub-unit and unit training and culminated in exercises at the Brigade Group level.

The Regular Officer Training Plan (ROTP).—The Regular Officer Training Plan, under which selected students are trained for commissions in the Canadian Army (Regular), is in effect at the three Canadian Services Colleges and at all Canadian universities and affiliated colleges that have contingents of the COTC. Students enrol in the Canadian Army (Regular) with a special rate of pay; tuition and essential fees are paid and grants given for the required books and instruments. During the year ended Mar. 31, 1963,

104 of these sponsored students graduated and were commissioned. Training consists of military studies, drill and physical training during the academic year; the summer term is devoted to practical training at military establishments.

The Canadian Officers' Training Corps (COTC).—Units of the Canadian Officers' Training Corps are maintained at Canadian universities to produce primarily, from among university undergraduates, officers for the reserve components of the Army. University graduates who have been members of the Canadian Officers' Training Corps are also eligible for commissions in the Canadian Army (Regular). Members of the COTC undertake training similar to that given members of the ROTP. During the year ended Mar. 31, 1963, 15 who had trained with the COTC were awarded commissions in the Canadian Army (Regular).

Canadian Army (Militia).—The role of the Militia is to prepare for survival operations, complement the active force and provide assistance for internal security on mobilization. The training aim is to establish a nucleus of trained or partially trained personnel and units to meet these requirements. In 1962 funds were provided to permit an average of 40 days training for all ranks, plus up to 70 days for key Militia personnel. This included seven days of summer training for selected personnel by attachment to Regular Army Units, attendance at command camps and in-job training at establishments and headquarters. During the summer 31,101 all ranks, including members of the Canadian Women's Army Corps and high school students, participated in survival and military training. At Mar. 31, 1963, Militia membership totalled 53,872 all ranks.

Royal Canadian Army Cadets.—The aim of the Army Cadet organization is to provide cadets with a sound knowledge of military fundamentals based on the qualities of leadership, patriotism and good citizenship. Planning and the supervision of organization, administration and training are carried out by the Canadian Army (Regular). A total of 113 officers and men are employed continuously on these duties.

Training and administration of Army Cadets are the responsibility of officers of the Cadet Services of Canada, a sub-component of the reserves, and civilian instructors. As at Mar. 31, 1963, a total of 2,396 cadet instructors were engaged in these activities. Cadets take a progressive three-year course in basic military subjects at local headquarters and selected cadets are given training at summer camps. In 1962, 5,389 cadets attended seven-week trades and specialists courses at summer camps at Aldershot, N.S., Farnham, Que., Camp Borden and Ipperwash, Ont., and Vernon, B.C.; 975 attended two-week junior leader and special courses at Camp Borden, Ont., and Clear Lake and Rivers, Man.; 214 Master and First Class cadets attended the National Cadet Camp, Banff, Alta., for four weeks; 377 cadet instructors attended qualifying courses up to seven weeks, and another 467 were employed in training and administrative duties at summer camps. As at Mar. 31, 1963, a total of 75,094 cadets were enrolled in 507 corps.

Subsection 3.—The Royal Canadian Air Force

Organization.—The RCAF is controlled from Air Force Headquarters at Ottawa, which is responsible for planning, policy and administration of the Regular and Reserve components of the RCAF. The Headquarters organization comprises four major Divisions—Plans and Operations, Technical Services, Personnel and Comptroller. On Mar. 31, 1963, the major RCAF formations and their Headquarters locations were as follows:—

<u>Formations</u>	<u>Headquarters</u>
Air Defence Command.....	St. Hubert, Que.
5 Air Division.....	Victoria, B.C.
1 Air Division.....	Metz, France
Air Transport Command.....	Trenton, Ont.
Air Materiel Command.....	Rockcliffe, Ont.
Maritime Air Command.....	Halifax, N.S.
Training Command.....	Winnipeg, Man.

The organization included 22 flying squadrons of the RCAF Regular and 11 flying squadrons of the RCAF Auxiliary. The Auxiliary squadrons performed an emergency and rescue role. Five of the Regular squadrons contributed to the air defence of the Canada-United States regions; eight squadrons were assigned to No. 1 Air Division in Europe; four squadrons were required for RCAF transport operations at home and abroad; four maritime squadrons operated in conjunction with other forces for the defence of Canada's East and West Coasts; and one reconnaissance squadron carried out aerial photography and reconnaissance in Canada.

The strength of the RCAF at Mar. 31, 1963 was 52,458 officers and men in the Regular Force and 2,223 in the Auxiliary Air Force.

Operations in 1962.—The RCAF contribution to the air defence of North America, consisting of five *CF101B* squadrons, two *Bomarc* squadrons and the many radar sites, continued under the operational control of North American Air Defence Command (NORAD). No. 1 Air Division, Canada's NATO contribution in Europe, commenced the changeover from air defence squadrons using *F86* and *CF100* aircraft to tactical squadrons employing *CF104* aircraft. By the end of March 1963, all four *CF100* squadrons and two *F86* squadrons were disbanded and two *CF104* squadrons were formed.

Air Defence Command continued its planned build-up of the Pinetree Line radar system, and continued to operate the Distant Early Warning Line (DEW) and the Mid-Canada Line (MCL) as an integral part of NORAD. The RCAF continued the take-over of the U.S.-financed and manned radar sites in accordance with the government agreement. The Ground Observer Corps continued operations in the North as a supplement to the DEW radar system.

The RCAF Maritime Air Command during 1962 contributed four land-based maritime squadrons to the Maritime Defence of North America. Three of these squadrons, based on the East Coast, have been completely equipped with *Argus* aircraft, the largest and most modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was also conducted throughout the period. These three squadrons and a *Neptune* aircraft squadron on the West Coast participated in a number of national, international and NATO anti-submarine exercises conducted throughout the year. Daily patrols and surveillance of ocean areas adjacent to the Canadian coastline were also maintained.

Air Transport Command continued to provide support to the Air Division and to the Army Brigade in Europe using its new *Yukon* aircraft. Airlift support was also given to the United Nations Emergency Force Middle East and the Organization des Nations Unies du Congo using *Yukon* and *North Star* aircraft. In addition, a flying unit operating *Caribou* and *Otter* aircraft was maintained for local employment in Egypt in support of UNEF. In Canada, *ATC* aircraft airlifted DND personnel and cargo over air routes from coast to coast. *C119* were used for paratroop training of the Canadian Army, and 408 Squadron carried out routine reconnaissance flights in the Arctic Archipelago and photographic missions for the Department of National Defence.

During the year, the RCAF continued to provide search and rescue services in Canadian areas of responsibility. Of the 36 major searches conducted, 31 were for civil aircraft and five were for military aircraft. In addition, there were 11 major marine searches and 371 mercy flights. The total time for search and rescue operations was 8,222 hours.

Training.—During the year ended Mar. 31, 1963, the RCAF provided training for approximately 4,500 officers and airmen to replace releases, meet increased establishments and assume new appointments resulting from modernization of equipment.

Approximately 800 entrants whose native language is French were given from 10 to 21 weeks of instruction in the English language in schools located at St. Jean, Que., and Centralia, Ont. Basic training qualified personnel to do the rather simple but vital jobs

in the RCAF; conversion and advanced training qualified personnel to perform more complex jobs and to assume increased responsibilities. During the year, training continued in the operation and maintenance of the *SAGE* and *Bomarc* systems which have become operational in the RCAF. To keep pace with rapid technological developments, a number of officers and airmen attended short familiarization courses on guided missiles and space technology at Clinton, Ont.; some attended brief familiarization courses on computers and other electronic equipment at Clinton; a few attended specialized courses with industrial firms; and a few took postgraduate courses, mainly at Canadian universities, to qualify for highly specialized positions.

Pilot and radio navigator trainees received training at the Central Officers School at Centralia, Ont. Pilot trainees were given primary flying training at Centralia, basic training at Moose Jaw, Sask., or Penhold, Alta., and advanced flying training at Portage la Prairie, Man., or Gimli, Man. Radio navigators received training at Winnipeg, Man. Under bilateral agreements, 45 Danish and 30 Norwegian nationals entered training as pilots. About 30 Canadian Army officers received a 70-hour flying training course at Centralia and 30 RCN personnel received advanced twin-engine training at Saskatoon, Sask., and Rivers, Man.

Formal trade courses for tradesmen and technicians and newly commissioned non-flying list officers in aeronautical engineering, armament, supply, telecommunications and flying control were conducted at RCAF technical schools in Ontario located at Camp Borden, Centralia and Clinton. Aircraft system trainers were used extensively to support technician and aircrew training programs at field technical training units and operational training units. Advanced personnel, both Regular and Reserve, were given assistance in a wide range of subjects to help them improve in job proficiency and to qualify for higher trade groupings. Semi-annual trade examinations were written under the direction of the Training Standards Establishment located at Trenton, Ont.

RCAF Reserve.—The active sub-components of the RCAF Reserves are designated as the Auxiliary and the Primary Reserve. Eleven Auxiliary Flying Squadrons, equipped with transport aircraft, are maintained to carry out, in the event of an emergency, air operations in support of military and civilian requirements and to carry out air search and transport operations within their capabilities. Twelve Auxiliary Medical Units and eight Technical Training Units are also maintained. The Primary Reserve is concerned mainly with the training of members of the University Reserve Training Plan (URTP). Other Primary Reserve components are Air Cadet Officers (ACO) and Manning Support Officers.

Each summer some 300 first-year URTP university undergraduates attend an officers' training course at the Reserve Officers School at Centralia, Ont. Following this initial training, cadets in the aeronautical engineering, telecommunications, construction engineering, armament, mobile support equipment, supply, accounts, and administration branches commence basic training at RCAF training schools while cadets in the air services, medical, chaplain and personnel branches are employed at Regular Force units on contact training. Second-year and third-year cadets continue with formal or contact training commenced in previous years.

Manning Support Officers are employed for a minimum of 15 or a maximum of 30 days during each fiscal year on Career Counselling duties at RCAF Recruiting Units.

Royal Canadian Air Cadets.—Air cadet activities are sponsored and administered by the Air Cadet League of Canada, a voluntary civilian organization. The objectives of air cadet training are to encourage air cadets to develop the attributes of good citizenship, to stimulate in them an interest in aviation and space technology and to help them develop a high standard of physical fitness, mental alertness and discipline. The RCAF works in partnership with the League and provides training personnel, syllabi and equipment.

The authorized ceiling of cadet enrolment is 28,000 and the strength at Mar. 31, 1963 was approximately 26,900 attached to 347 squadrons across Canada. Cadet training is carried out in more than 290 communities from Newfoundland to British Columbia.

During the summer of 1962, camps were held at RCAF Stations at Greenwood, N.S., St. Jean, Que., Trenton, Ont., and Sea Island, B.C., attended by over 7,000 cadets together with officers and instructors. A seven-week course for senior leaders was held for 240 cadets at RCAF Station, Camp Borden, Ont. Under the International Exchange Visits Program for 1962, sponsored jointly by the RCAF and the Air Cadet League, 58 cadets were exchanged with Britain, the United States, Denmark, the Netherlands, Norway, Sweden, Belgium, France, West Germany, Italy and Israel.

About 250 senior air cadets receive flying training annually at flying clubs through scholarships provided by the RCAF and additional scholarships are awarded by the Air Cadet League and other organizations, which in 1962 numbered 109.

Subsection 4.—The Defence Research Board

The Defence Research Board, established on Apr. 1, 1947, provides scientific assistance and advice to the Canadian Forces. It consists of a full-time chairman and vice-chairman, five ex officio members and nine other appointed members. The ex officio members are the Chiefs of Staff of the three Armed Services, the Deputy Minister of National Defence and the President of the National Research Council. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research group and nine research laboratories, and liaison offices at London, England, and Washington, U.S.A. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Defence Research Board is a fully integrated and permanent part of the defences of the country. The Chairman has the status of a Chief of Staff and is a member of the Chiefs of Staff Committee and of the Defence Council. The Board's fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. Its efforts are concentrated upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as the National Research Council are used whenever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. Close collaboration is maintained with Canada's larger partners; specialization is made possible only through the willingness of Britain and the United States to exchange the results of their broader programs for the less numerous but nevertheless valuable benefits of Canadian research.

The Board operates nine specialized research and development laboratories which are concerned primarily with maritime warfare, guns, rockets and missiles as armaments, defence against missiles, research on the upper atmosphere using ground-based equipment as well as balloons, rockets and satellites, propulsion and propellants, telecommunications, geophysical studies of the Arctic, defence against atomic, chemical and biological weapons, studies of shock and blast, biosciences research and operational research. The Board also supports and organizes an extramural program of research in the universities and industry. Some 200 grants are awarded annually to Canadian university staff members for research on problems of defence interest and a special fund is used to place contracts with industry for research in selected fields.

Research on maritime warfare problems, particularly those relating to submarine detection and tracking, is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. Research and development of weapons and defence against various weapons is undertaken in co-operation with the

Armed Services at several establishments, the largest of which is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities include studies of defence against missiles, studies of the properties and application of infrared and other detection devices, exploration of the upper atmosphere with balloons and rockets, and the development of rocket propellants.

The Defence Research Telecommunications Establishment in Ottawa is concerned mainly with problems of communications which involves exploration of the ionosphere with ground-based equipment, with rockets and with satellites, and the applications of the science of electronics to military problems. The Defence Research Northern Laboratory, Fort Churchill, Man., conducts a variety of experiments requiring an Arctic environment including studies of the aurora borealis, communications experiments and rocket firings. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at three Defence Research Board establishments—the Defence Research Chemical Laboratories at Ottawa, Ont., the Suffield Experimental Station at Ralston, Alta., and the Defence Research Kingston Laboratory at Barriefield, Ont.

The Defence Research Medical Laboratories near Toronto are concerned with biosciences research, chiefly with raising the operating efficiency of man working in the military environment, and includes such subjects as human physiology, experimental psychology and research on clothing.

Operational research is carried on by a headquarters group which conducts long-range scientific analyses of future defence problems. Trained operational research scientists are provided by the Board to the operational research teams in the three Armed Services.

Thus, the Board continues to support the fields of research that are of foremost interest to the Canadian Armed Services and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

Section 2.—Services Colleges and Staff Training Colleges

Canadian Services Colleges.—The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and Collège Militaire Royal de Saint-Jean established at St. Jean, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège Militaire Royal de Saint-Jean was opened in 1952. In 1959 the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provide a sound and balanced liberal scientific and military education leading to degrees in arts, science and engineering which are granted by the Royal Military College. The organization and training give cadets the opportunity to command and to exercise judgment.

For cadets entering the Royal Military College and Royal Roads the course is of four years duration. As the third and fourth years of the course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final two years of the arts, science or engineering courses. For cadets entering Collège Militaire Royal de Saint-Jean, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and the final two years at the Royal Military College.

Academic requirement for admission to the first year at the Royal Military College and Royal Roads is senior matriculation (or its equivalent) in the following subjects: English, physics, mathematics (algebra, geometry and trigonometry), chemistry and either history or a language, preferably French. French-speaking candidates having a B.A. degree from a classical college may be accepted directly into the first year at Collège Militaire Royal. For admission to the preparatory year at that institution, the academic requirement is junior matriculation (or its equivalent) in English, French, algebra, geometry, physics and chemistry, although consideration is given candidates who do not possess the standing in French. Candidates from the classical colleges require at least sixth-year standing.

To be accepted, a candidate must be single, a Canadian citizen or British subject normally resident in Canada, and physically fit in accordance with the medical standards of the Service in which he enrolls. The age limits for admission to the first year are between 16 and 21 years as of Jan. 1 of the year of entry; for admission to the preparatory year a cadet must have reached his 16th but not his 20th birthday on Jan. 1 of the year of entry. Personal interviews and medical examinations of candidates are carried out by Service Boards located at various centres across Canada.

Most cadets entering the Services Colleges enrol under the Regular Officer Training Plan. Applicants accepted for entry enrol according to their choice, as naval cadets in the Royal Canadian Navy, as officer cadets in the Canadian Army or as flight cadets in the Royal Canadian Air Force. Costs of tuition, board, lodging, uniforms, books, instruments and other essential fees are borne by the Department of National Defence and cadets are paid at the rate of \$63 a month. On successfully completing their academic and military training, cadets are granted permanent commissions in the Regular Force but may, if they so wish, apply for release after three years of service following completion of academic training.

A limited number of high school students may be selected to enter the Services Colleges on payment of tuition fees, etc. Graduates are granted commissions and serve in the reserve components of the Forces. Young men who qualify for Dominion Cadetships also serve in a reserve capacity. These Cadetships are awarded by the Federal Government in recognition of a candidate's parent having been killed, died or been severely incapacitated in the service of one of Canada's Armed Forces. A maximum of 15 Dominion Cadetships may be awarded in any one year, five in each Service. Each is valued at \$580, which covers first-year fees.

During the 1962-63 academic year, 1,102 cadets were in attendance at the Services Colleges, 495 of them at the Royal Military College, 212 at Royal Roads and 395 at Collège Militaire Royal de Saint-Jean. Of the total, 263 were enrolled in the Navy, 411 in the Army and 428 in the Air Force.

Staff Training Colleges.—The Canadian Army Staff College at Kingston, Ont., trains officers for staff appointments. The course is 21 months in duration with a student intake every second year. Although most of the student body is composed of Canadian Army officers, officers from the other two Services and from the armies of other Commonwealth and NATO countries also attend. The system of instruction is based upon the study of précis and other references, demonstrations and lectures, and indoor and outdoor exercises. Aside from purely military subjects, the curriculum includes national survival, research and development, world affairs and lectures by prominent guest speakers.

The Royal Canadian Air Force College at Armour Heights in Toronto, Ont., is a permanent establishment consisting of a Staff College for senior officers and a Staff School for junior officers. The former affords professional education for officers normally of

Squadron Leader and Wing Commander ranks, preparing them to assume higher appointments. The directing staff selected from the Royal Canadian Air Force is augmented by an officer from each of the Royal Canadian Navy, the Canadian Army and the Royal Air Force. The student body, in addition to Royal Canadian Air Force officers, has ten representatives from the Royal Canadian Navy and one or two from each of the Canadian Army, Royal Air Force and United States Air Force. The College and School courses are designed to assist the student to think logically and express his ideas with precision, both orally and in writing; to know his Service and understand the employment of air forces; to keep abreast of scientific and technical developments that may affect the employment of air forces; and to gain a perspective of national and international problems. Lecturers are drawn, when desirable, from industry, the Armed Forces, the diplomatic corps and universities. Instructional visits are made to commercial and military establishments in Canada and abroad.

The National Defence College at Kingston, Ont., is a senior defence college providing an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and civil servants from the Armed Forces and government departments attend, as well as a few representatives from industry. An extensive lecture course is provided, with lecturers chosen from among the leaders in various fields in Canada, the United States, Britain and other countries. In addition, educational tours and visits to certain parts of Canada, the United States, Europe and the Middle East give students more knowledge of conditions and influences in their own and other countries. The 16th course, held from August 1962 to July 1963, was attended by: three students from the Royal Canadian Navy, four from the Canadian Army and five from the Royal Canadian Air Force; two each from the Defence Research Board and the Department of Transport; and one each from the Department of External Affairs, Department of National Defence, Department of National Revenue, National Research Council, Atomic Energy of Canada and Defence Construction Limited. Representation from outside Canada included one member each from the Royal Navy, the British Army, the Royal Air Force, the British Foreign Office, the United States Army, the United States Navy, the United States Air Force and the State Department of the United States.

PART II.—DEFENCE PRODUCTION*

Under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended), the Department of Defence Production has exclusive authority to procure the goods and services required by the Department of National Defence and the responsibility to ensure that the necessary productive capacity and materials are available to support the defence production program. The Department also serves as procurement agent for the Canadian Commercial Corporation, a Crown company primarily responsible for the purchase in Canada of defence goods required by other governments and of supplies to meet Canadian requirements under External Aid programs and other international agreements. The Department is responsible for planning and making other necessary arrangements for the immediate establishment of a War Supplies Agency should there be a nuclear attack. Military construction is the prime responsibility of Defence Construction (1951) Limited, a Crown company reporting to Parliament through the Minister of Defence Production.

Procurement and construction contracts issued by the Department of Defence Production and Defence Construction (1951) Limited had a net value of \$797,640,000 in 1962 and \$410,015,000 in the first half of 1963. (The net value of contracts is made up of the

* Prepared by the Economics and Statistics Branch, Department of Defence Production, Ottawa.

value of new contracts issued as well as amendments that increased or decreased existing contracts.) The net value of contracts in 1962 according to the various sources for which they were issued was as follows:—

<i>Source</i>	<i>Net Value</i>	<i>P.C. of Total Value</i>
	\$	
Department of National Defence.....	536,666,324	67.28
Department of Defence Production (DDP Votes).....	9,387,255	1.18
Foreign Governments—		
United States.....	202,886,820	25.44
Britain.....	1,147,166	0.14
Other.....	21,586,283	2.71
Canadian Sources other than DND and DDP—		
Colombo Plan.....	24,981,231	3.13
Other.....	984,688	0.12
TOTALS.....	797,639,767	100.00

Of the \$410,015,000 in contracts issued during the first half of 1963, \$344,190,000 or 84 p.c. was for the Department of National Defence.

The \$536,666,000 in contracts placed for the Department of National Defence in 1962 was 1.5 p.c. above the value in 1961. The aircraft program accounted for most of the increase; it rose from \$112,693,000 to \$205,252,000, due in a substantial measure to contracting for the *F-104G* aircraft for the Canada-United States mutual aid program. Contracting for the electronics and communication equipment program showed a net decrease from 1961 of 32.4 p.c. to \$82,785,000. Shipbuilding and repairing contracts increased to \$27,841,000 compared with \$26,585,000 in 1961. Significant reductions in contracting appeared in the defence construction program which declined by 56.4 p.c. to \$39,443,000 in 1962. Armament program contracts (including weapons, ammunition and explosives) increased to \$25,466,000 from \$11,812,000 in 1961.

Contracts placed outside Canada on behalf of the Department of National Defence in 1962 amounted to \$50,143,000, which was 9 p.c. of the total net value of prime contracts issued. Contracts valued at \$32,117,000 were placed in the United States, \$5,171,000 in Britain and \$12,855,000 in other countries.

Expenditures on contracts placed for the Department of National Defence amounted to \$306,374,000 or 2.5 p.c. less than in 1961. Expenditures against aircraft programs declined from 1961 levels by \$30,851,000 or 13.9 p.c. and those for electronics and communication equipment by \$10,301,000 to \$113,537,000 in 1962. Expenditures for ships increased to \$53,503,000 as a result of increasing work done on the destroyer escort program. In the first half of 1963, expenditures against prime contracts placed for the Department of National Defence stood at \$270,614,000.

The Department of Defence Production placed \$9,387,000 in contracts in 1962 and \$5,562,000 in the first half of 1963 against certain appropriations to assist Canadian defence industry. The major area of assistance in 1962, which involved contracts totalling \$8,466,000, was to sustain research and development capability in Canadian industry related to the needs of the Canada-United States development and production sharing program. Revolving Fund contracts amounted to \$115,386,000 in 1962, primarily to make funds available for production in connection with the Canada-United States *F-104G* mutual aid program. Revolving Fund contracts amounted to \$17,033,000 in the first half of 1963.

Contracts placed for all sources other than the Department of National Defence and Defence Production totalled \$251,586,000 in 1962, of which \$202,887,000 was for the United States Government and \$1,147,166 for the British Government.

1.—Canadian Government Defence Contracts and Expenditures, by Defence Program, 1962 and First Half of 1963

NOTE.—The contract values include all contracts placed by the Department of Defence Production and Defence Construction (1951) Limited on behalf of the Department of National Defence, and the expenditure values include all payments made by the Department of National Defence against such contracts. The net value includes the value of all new contracts issued together with the value of amendments which increased or decreased the commitments of existing contracts.

Program	Net Value of Total Contracts		Expenditures on Contracts	
	1962	1963 (First Half)	1962	1963 (First Half)
	\$'000	\$'000	\$'000	\$'000
Aircraft.....	205,252	138,655	190,900	89,250
Armament.....	25,466	6,778	15,948	12,948
Electronics and communication equipment.....	82,785	48,880	113,537	53,725
Ships.....	27,841	33,199	53,503	28,441
Tank-automotive.....	8,924	6,570	9,818	6,656
Fuels and lubricants.....	38,605	40,388	37,711	15,151
Clothing and equipage.....	12,814	5,517	10,763	6,396
Construction.....	39,443	17,643	80,802	14,125
Other.....	95,536	46,560	93,393	43,922
Totals.....	536,666	344,190	606,374	270,614

Defence Production and Development Sharing.—In 1962, \$254,300,000 worth of United States defence production-sharing business was placed with Canadian industry. This was a 78-p.c. increase over 1961, due largely to contracts for *Caribou* aircraft and a contribution by the United States to the Canada-United States *F-104G* aircraft program. The total United States defence production-sharing business in this country during the four years of the program was \$605,900,000.

During 1962, continuing attention was given to simplifying procedural arrangements, such as those involved in the United States duty regulations, security matters, obtaining specifications and interpreting new instructions issued by the United States Department of Defense and military authorities. The provision of information on the program to prime contractors and subcontractors, as well as to government procurement officers, was emphasized by both governments. Publications issued during the year included: a new edition of the *Production Sharing Handbook*; a handbook entitled *Canadian Commodity Index*; a *Guide to Research and Development Capabilities in Canadian Defence Industry*, designed to assist government research and development agencies and the defence industry in the United States to locate potential sources within Canadian industry; and a *Defence Development Sharing* handbook, designed to assist Canadian companies in participating in United States defence research and development requirements.

Assistance was given to Canadian industry for research and development projects of interest to the United States Services. Contracts amounting to \$8,500,000 were issued in 1962 for this type of assistance, with expenditures totalling almost \$6,800,000. Among the major new projects were surveillance and guidance systems, short take-off and landing (STOL) aircraft, communications and navigation equipment, and surface vehicles.

These efforts resulted in significant increases in bid solicitation and submissions in the prime contract area. United States inquiries to Canadian industry increased from 5,786 in 1961 to 8,290 in 1962, and responses by Canadian companies from 1,799 to 2,384. Prime contracts placed by the United States Government with Canadian Commercial Corporation increased from 830 to 1,088, having a total value of \$176,500,000. In the subcontract area, solicitations increased from 2,524 in 1961 to 3,108 in 1962, and responses

from 1,986 to 2,624. Subcontracts received by Canadian firms increased from 1,111 to 1,769, valued at \$76,500,000. Other prime contracts received directly from the United States Government by Canadian industry and other institutions totalled \$1,300,000.

Co-operation in NATO on RDP and Exports Overseas.—This program of research, development and production endeavours to attain maximum efficiency in standardization and production of military equipment by member countries of the North Atlantic Treaty Organization. Canada has submitted for consideration by the NATO groups a number of projects in the fields of vertical and short take-off and landing (V/STOL) aircraft, mobile radar, vehicle navigation equipment, sonar equipment, personnel carriers, anti-tank weapons, anti-personnel land mines, airborne navigation aids, aircraft engines, and telephone terminal equipment.

Canadian industry was encouraged to participate in supplying the defence needs of European and other countries in such areas as aircraft, navigation aids and engine spares. During 1962, Canadian firms reported that they had received \$45,114,000 in prime contracts and subcontracts from NATO and other countries (excluding the United States) of which prime contracts accounted for \$7,359,000. Subcontracts placed in Canada by overseas countries amounted to \$37,755,000. The major purchases in this group were for inertial navigation systems, vehicle spares, positional homing indicators, *F-104G* support equipment and engine spares.

Emergency Supply Planning.—In 1962, the Department continued with plans and preparations to bring a War Supplies Agency into immediate existence in the event of a nuclear war. The Agency would assume control of the production, distribution and pricing of all civilian and military supplies except for certain aspects of the agricultural and fishing industries. The staffing of the national and regional components of the War Supplies Agency on a standby basis was completed, and progress was made in the selection of zonal standby staffs. In several areas, a beginning was made in the selection of standby staff for local components.

In order to provide a basis on which the War Supplies Agency could make a post-attack assessment of surviving supply resources, the research program was extended to produce in readily usable form comprehensive inventory data on major stocks of essential commodities and related production facilities normally available in this country. New surveys of inventory stocks and related production facilities were initiated in the materials field. In co-operation with the oil industry, energy vulnerability studies were begun and are continuing. In addition, economic studies of two emergency government zones and reports on specific segments of industry were completed. Although the research program as a whole is primarily a long-term project, significant progress was made.

Various emergency regulations and orders required to bring the War Supplies Agency into existence and give it authority under the War Measures Act were reviewed in their peacetime draft form and brought up to date. Manning and warning procedures were revised, and a system for the control of personnel records of the national and regional standby staffs was instituted in co-operation with the Department.

Plans for consumer rationing advanced to the point where sample ration documents were approved by an interdepartmental advisory committee. Agreement was reached on the transfer of a quantity of surplus military clothing to the Department for civilian use under War Supplies Agency control in an emergency. Also, the Government approved a program of industrial preparedness measures.

PART III.—CIVIL EMERGENCY PLANNING (CIVIL DEFENCE)

The present arrangements for civil emergency planning in Canada took form in 1958, when the Canadian Government instituted a survey of the civil defence situation in Canada in the context of the total military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. This review led to a major rearrangement of

federal civil defence functions, together with an offer from the Federal Government to assume certain responsibilities previously carried out by provinces and municipalities. This reorganization became effective on Sept. 1, 1959, and was based on two principles: (1) that civil defence should be considered a function or activity of government rather than a separate organization as such; and (2) that the civil defence function should be divided into clearly defined tasks assigned to the appropriate level of government, and at each governmental level, made the responsibility of those departments or agencies best able to undertake and discharge them. A further change took place on July 1, 1963, when the Emergency Measures Organization, which until that time had been part of the Privy Council Office, reporting to Parliament through the Prime Minister, was placed under the control and supervision of the Minister of Defence Production and designated as a department for administrative purposes. At the same time, responsibility for the direction and administration of the Canadian Civil Defence College at Arnprior, Ont., was transferred from the Minister of National Health and Welfare to the Minister of Defence Production, to be exercised through EMO.

At the federal level, the present distribution of responsibilities resulting from these changes is as follows:—

- (1) The Emergency Measures Organization is the co-ordinating agency for all civil emergency planning and for all federal/provincial planning. Its responsibilities include planning for continuity of government, all tasks not specifically assigned to another department of government, general liaison with the provinces, NATO and foreign countries on matters relating to civil emergency planning, and operation and administration of the Canadian Civil Defence College.
- (2) The Department of National Defence, more particularly the Army, has a primary role in survival operations and has been delegated the responsibility for a substantial number of functions that are technical in character (see pp. 1110-1111).
- (3) The Department of National Health and Welfare has the duty of advising and assisting provincial authorities with respect to the provision of emergency health and welfare services.
- (4) The Royal Canadian Mounted Police is responsible for providing advice and assistance to provinces concerning the preservation of law and order, and the control of road traffic under emergency conditions.
- (5) Other federal departments and agencies have duties that relate chiefly to carrying on essential functions or to maintaining the country's economic life under conditions of nuclear attack, e.g., the Department of Defence Production, the Department of Agriculture, the Department of Finance, the Bank of Canada, the Department of Transport, the Canadian Broadcasting Corporation, and the Department of Labour in consultation with the National Employment Service of the Unemployment Insurance Commission.

Certain emergency functions of government are a projection of normal peacetime provincial responsibilities. In such fields, the provinces and municipalities understandably have more experience and knowledge of local conditions and problems than has the Federal Government and its agencies. The following represent responsibilities of this kind, and are considered to be the proper concern of provincial authorities with such federal assistance as may prove necessary:—

- (1) Preservation of law and order and the prevention of panic by the use of provincial and municipal police and special constables, with whatever support is necessary and feasible from the RCMP and the Armed Services at provincial request.
- (2) Control of road traffic, except in areas damaged or covered by heavy fallout, including special measures to assist in the emergency movement of people from areas likely to be attacked or affected by heavy fallout.
- (3) Reception services, including arrangements for providing accommodation, emergency feeding and other emergency supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities.
- (4) Organization and control of medical services, hospitals and public health measures.
- (5) Maintenance, clearance and repair of highways.
- (6) Organization of municipal and other services for the maintenance and repair of water and sewage systems.
- (7) Organization of municipal and other firefighting services, and control over and direction of these services in wartime, except in damaged or heavy fallout areas, where firefighting services would be under the direction of the Army as part of the re-entry operation.

The federal Civil Emergency Planning Organization consists of a Cabinet Committee on Emergency Plans to give policy guidance in all areas of civil emergency planning for war, the federal Emergency Measures Organization (EMO) with a headquarters staff at Ottawa and regional offices in each provincial capital, and departmental planning staffs. The function of the regional offices of EMO is to co-ordinate the emergency planning of federal departments and agencies in the provinces and maintain liaison with provincial governments, the provincial emergency planning organizations and the appropriate military authorities. At the international level, EMO has an officer in Paris to maintain liaison with other NATO countries and to keep abreast of developments in civil emergency planning in these countries. Liaison with the United States is carried out by the headquarters staff in Ottawa.

EMO administers a Financial Assistance Program to assist the provinces and municipalities in the development of emergency plans. Under this Program, the Federal Government may pay up to 75 p.c. of the cost of approved civil defence projects; \$5,300,000 was earmarked for this purpose for the year ending Mar. 31, 1964. Advice and guidance is also given at the government level; a *Survival Planning Guide for Municipalities* was issued by EMO in 1961 and additions and amendments to this Guide are issued from time to time as additional experience and knowledge are acquired.

To provide the public with information on survival measures, shelter designs and related matters, EMO and other government agencies have published literature of various kinds. The booklet *Survival in Likely Target Areas* examines the advantages and disadvantages of evacuation as opposed to shelter. The leaflet *Simpler Shelters* includes five designs for less complex shelters for both basement and outdoor construction. These publications supplement the booklet *11 Steps to Survival*, a general outline of what can be done for personal protection; *Your Basement Fallout Shelter* giving instructions for "do-it-yourself" shelters; and *Fallout on the Farm* describing the effects of radioactive fallout on agriculture and the protective measures that might be taken against it. Copies of these publications may be obtained from provincial civil defence or emergency measures co-ordinators in provincial capitals.

A War Supplies Agency, established in 1960 and administered by the Department of Defence Production, will, in time of war, control the distribution and use of essential supplies, their prices, and their rationing as required. The Emergency Supply Planning Branch, which has the direct responsibility for the development of this Agency, has a headquarters staff in Ottawa and representatives in each region of Canada.

One of the major accomplishments of EMO has been the establishment of emergency facilities for the Federal Government in the Ottawa area, and the construction of regional emergency headquarters in six provinces; plans are proceeding in the other four provinces for the development of similar facilities. To ensure the further decentralization and dispersal of authority during an emergency, planning is proceeding on the development, in co-operation with the provinces, of a system of zone headquarters which will form part of the government structure at the level below that of the regional emergency headquarters.

To ensure continuity of communications in an emergency, an Emergency National Telecommunications Organization has been established within the Department of Transport. Under its authority, the Canadian Broadcasting Corporation has developed plans for emergency broadcasting which can be instituted at any time of the day or night to broadcast to all areas of Canada (see also p. 836).

A federal-provincial Conference on Civil Emergency Planning was held in December 1952. All provinces were represented and a number of federal Cabinet Ministers attended. This was in continuation of conferences held in previous years. Matters reviewed and discussed included the federal Financial Assistance Program, public information programs, training and exercises, shelter policy, radiological defence, and the decentralization of government in an emergency.

CHAPTER XXVI.—SOURCES OF OFFICIAL INFORMATION AND MISCELLANEOUS DATA

CONSPECTUS

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PART I.—SOURCES OF OFFICIAL INFORMATION

Section 1.—Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds—federal and provincial—is centralized. Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources of information with which to communicate. Other fields of effort such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces and data may be obtained concerning the individual provincial efforts in these fields from the respective provincial government departments. However, certain federal departments are also concerned with specific aspects of these subjects and, as in the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole. The Government of Canada, while not administering the resources within the provincial boundaries, co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis, and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions on forest research, forest fire protection and reforestation offer good examples.

Certain Federal Government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Trade Publicity Branch, Department of Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Broadcasting Corporation; and the National Film Board. The Departments of Agriculture, Fisheries, Forestry, Northern Affairs and National Resources, and Mines and

Technical Surveys, and such agencies as the National Gallery of Canada, the National Museum of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, although several of the latter have publicity branches.

Thus, inquiries for information of a statistical nature should be forwarded to the Information and Public Relations Division, Dominion Bureau of Statistics, Ottawa. Inquiries to federal sources for information not of a statistical nature should be sent as a general rule to the individual departments and agencies of government which are listed, with their functions, at pp. 104-122 of this publication. Inquiries relating to provincial efforts may be directed to the provincial government department concerned. Inquiries about the Yukon and Northwest Territories should be addressed to the Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

Section 2. Sale of Official Publications

Under the provisions of the Public Printing and Stationery Act, the Queen's Printer and Controller of Stationery, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sec. 7 (e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer and Controller of Stationery issues the *Daily Checklist of Government Publications* which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the *Daily Checklist* without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer and Controller of Stationery also issues the *Monthly Catalogue of Canadian Government Publications*, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an *Annual Catalogue* (in January) listing all publications issued during the previous year, as well as sectional catalogues and selected titles bulletins advertising new government publications.

The Queen's Printer is the national sales agent in Canada for publications issued by the United Nations; the United Nations Educational, Scientific and Cultural Organization; the World Health Organization; the Food and Agriculture Organization; the Organization for Economic Co-operation and Development; the International Atomic Energy Agency; the International Civil Aviation Organization; the Council of Europe; the Commonwealth Economic Committee; the Organization of American States (Pan American Union); the General Agreement on Tariffs and Trade; and the New Zealand Government.

Canadian Government and international organizations publications may be obtained from Queen's Printer bookstores located in Ottawa, Toronto and Montreal, or by mail from the Queen's Printer, Ottawa.

Dominion Bureau of Statistics Publications.—The Dominion Bureau of Statistics acts as the agent of the Queen's Printer with respect to the sale of DBS publications. Reports of the Bureau cover all aspects of the national economy; the *Canada Year Book* and *Official Handbook Canada* constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

DBS publications are listed with their prices in a catalogue of *Current Publications* and in the Queen's Printer's *Catalogue of Canadian Government Publications*. The DBS *Daily Bulletin* and *Weekly Bulletin*, available from the Bureau's Information and Public Relations Division at an annual subscription of \$1 each, are designed to serve persons wishing

to keep closely informed on the full range of published information issued by the Bureau. Subscription orders for DBS publications or orders for single copies should be addressed to the Information and Public Relations Division, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada.


Provincial Government Publications.—Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addressed to the provincial capital cities:—

Newfoundland.....St. John's
 Prince Edward Island.....Charlottetown
 Nova Scotia.....Halifax
 New Brunswick.....Fredericton
 Quebec.....Quebec

Ontario.....Toronto
 Manitoba.....Winnipeg
 Saskatchewan.....Regina
 Alberta.....Edmonton
 British Columbia.....Victoria

DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Information Division Dept. of Fisheries Information and Educational Services Dept. of Forestry Information and Technical Services Dept. of Mines and Technical Surveys Editorial and Information Division Dept. of National Health and Welfare Information Services Dept. of Northern Affairs and National Resources Information Services Division Dept. of Trade and Commerce Trade Publicity Branch Queen's Printer (<i>Canada Gazette</i> , <i>Statutes of Canada</i> , Organization of the Government of Canada, etc.) National Film Board (films, film- strips, photographs on all sub- jects) Dominion Bureau of Statistics	BROAD GENERAL INFORMATION  CANADA'S RESOURCES AND INSTITUTIONS	For broad general information in regard to particular provinces, application should be made to: Nfld., Dept. of Provincial Affairs; P.E.I., Tourist and Information Bureau; N.S., Dept. of Provincial Secretary; N.B., Dept. of Finance or N.B. Travel Bureau; Que., Dept. of Industry and Commerce, Bureau of Statistics, or Dept. of Tourism, Game and Fish; Ont., Dept. of Economics and Development, or Dept. of Travel and Publicity; Man., Dept. of Industry and Commerce or Dept. of Provincial Secretary; Sask., Dept. of Industry and Information, or Executive Council; Alta., Dept. of Industry and Development; B.C., Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.
Dept. of Agriculture Information Division Central Mortgage and Housing Corporation (mortgage loans for new farm houses) Dept. of Finance (farm improvement loans) Dept. of Labour (farm workers) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Trade and Commerce Agricultural and Fisheries Branch Dept. of Veterans Affairs (veterans) Farm Credit Corporation (mortgage loans) National Research Council Prairie Regional Laboratory, Sas- katoon, Sask. (utilization of crops and crop products) National Film Board Dominion Bureau of Statistics	AGRICULTURE General and Farming	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S., N.B., Sask., Alta.:— Depts. of Agriculture Que.:—Dept. of Agriculture and Colonization, Information and Research Branch Dept. of Industry and Commerce Bureau of Statistics Ont.:—Dept. of Agriculture, Farm Economics and Statistics Branch and Information Branch Man.:—Dept. of Agriculture and Conservation B.C.:—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dominion Bureau of Statistics (sum- maries of provincial data)

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Information Services Division Northern Administration Branch Northern Co-ordination and Research Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Mines and Technical Surveys Editorial and Information Division Polar Continental Shelf Project Dominion Observatories Geological Survey of Canada Surveys and Mapping Branch Geographical Branch Marine Sciences Branch Dept. of National Defence Director of Public Relations Defence Research Board Dept. of National Health and Welfare Dept. of Public Works Building Construction Branch Dept. of Transport (airports, weather stations, navigation, re-supply operations) Information Services Fisheries Research Board of Canada National Research Council Division of Building Research (permafrost, buildings in the North, snow and ice) National Film Board	ARCTIC	
Dept. of Mines and Technical Surveys Dominion Observatory, Ottawa, Ont. Dominion Astrophysical Observatory, Victoria, B.C. Dominion Radio Astrophysical Observatory, Penticton, B.C. National Research Council Radio and Electrical Engineering Division (radio astronomy)	ASTRONOMY	Que.:—Dept. of Cultural Affairs Quebec Society of Astronomy Man.:—University of Manitoba, Winnipeg Sask.:—University of Saskatchewan, Saskatoon Alta.:—University of Alberta, Edmonton
Atomic Energy of Canada Limited (research studies, sale of radio-isotopes) Atomic Energy Control Board (policy, regulations) Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Eldorado Mining and Refining Limited Queen's Printer (International Atomic Energy Agency)	ATOMIC ENERGY	Ont.:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Man.:—Dept. of Industry and Commerce, Manitoba Development Authority University of Manitoba, Physics Dept. Sask.:—University of Saskatchewan, Saskatoon Alta.:—Alberta Research Council, Edmonton B.C.:—University of British Columbia
Dept. of Transport Civil Aviation Branch (control; licensing; airports and air navigation facilities) Information Services Dept. of Defence Production Aircraft Branch Dept. of Mines and Technical Surveys Legal Surveys and Aeronautical Charts Division Dept. of National Defence Directorate of Public Relations (RCAF) Dept. of National Health and Welfare Civil Aviation Medicine Division Dept. of Northern Affairs and National Resources National Aviation Museum National Research Council National Aeronautical Establishment Queen's Printer (International Civil Aviation Organization) Trans-Canada Air Lines National Film Board Dominion Bureau of Statistics	AVIATION	Que.:—Quebec Government Air Services Ont.:—Dept. of Lands and Forests, Forest Protection Branch Man.:—Manitoba Government Air Services Sask.:—Saskair (formerly Sask. Government Airways)

Sources for Federal Data	Subject	Sources for Provincial Data
Bank of Canada Industrial Development Bank Central Mortgage and Housing Corporation Dept. of Finance (for banking; also small businesses loans) Dept. of Insurance (for trust and loan business; also administers the Small Loans Act) Post Office Department, Savings Bank Dominion Bureau of Statistics	BANKING Trust and Loan Companies	Nfld.:—Dept. of Finance Dept. of Provincial Affairs P.E.I., N.S.:—Dept. of Provincial Secretary N.B.:—Dept. of Finance Que.:—Dept. of Finance, Insurance Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Province of Ontario Savings Office Dept. of Insurance Man.:—Dept. of Provincial Secretary Manitoba Development Fund Manitoba Agricultural Credit Corporation Sask.:—Provincial Secretary, Registrar of Securities Dept. of Co-operation and Co-operative Development, Credit Union Services Alta.:—Treasury Dept., Superintendent of Treasury Branches B.C.:—Dept. of Finance, Inspector of Trust Companies
Dept. of Justice Superintendent of Bankruptcy Dominion Bureau of Statistics	BANKRUPTCY	Nfld., P.E.I., Alta.:—Depts. of Attorney General Man., Sask.:—Depts. of Provincial Secretary
National Library (information re Canadian publications and books in Canadian libraries; national bibliographies of other countries) National Research Council National Science Library (information re identification and location of scientific serials and research reports) Queen's Printer (Official Classification of Canadian Government Publications) Dominion Bureau of Statistics Information and Public Relations Division (for statistical publications)	BIBLIOGRAPHY	Nfld.:—Dept. of Education Public Libraries Board Dept. of Provincial Affairs, Archives P.E.I.:—Dept. of Education Superintendent of Libraries and Director of Adult Education Legislative Librarian N.S., N.B.:—Depts. of Education, Provincial Librarian Que.:—Office of Provincial Secretary Provincial Archives Provincial Library Dept. of Cultural Affairs Ont.:—Dept. of Education, Provincial Library Service Legislative Library Man.:—Dept. of Education, Provincial Librarian Sask.:—Provincial Library Legislative Library Alta.:—Dept. of Provincial Secretary Library Board Provincial Library and Archives B.C.:—Dept. of Provincial Secretary Provincial Library and Archives Public Library Commission
	BIRTHS See "Vital Statistics"	
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	BLINDNESS ALLOWANCES	Sources same as for "Old Age Assistance" excepting: B.C.:—Blind Persons Allowances Board

Sources for Federal Data

Subject

Sources for Provincial Data

BROADCASTING

See "Radio"
and "Television"

Central Mortgage and Housing Corporation (NHA financing, house designs, apartment building standards)
Canadian Government Specifications Board
Canadian Standards Association
Dept. of Defence Production
Defence Construction (1951) Limited
Dept. of Finance (Farm Improvement Loans Act; Small Businesses Loans Act)
Dept. of National Health and Welfare
Hospital Design Division
Dept. of Northern Affairs and National Resources
National Parks Branch
Northern Administration Branch
Dept. of Public Works
Building Construction Branch
Chief Architect and Information Services
Dept. of Transport
Air Services Construction Branch (airport terminal buildings, etc.)
Information Services
Dept. of Veterans Affairs (Soldier Settlement and Veterans Land Act)
Farm Credit Corporation
National Research Council
Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)
Dominion Bureau of Statistics

**BUILDING
CONSTRUCTION**

Nfld., N.B.:—Depts. of Public Works
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Dept. of Trade and Industry
Que.:—Farm Credit Bureau, Family Housing Division
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:—Dept. of Labour, Factory Inspection Branch
Dept. of Economics and Development, Housing Branch
Dept. of Public Works
Dept. of Municipal Affairs, Community Planning Branch
Man.:—Dept. of Industry and Commerce
Sask.:—Dept. of Labour
Alta.:—Dept. of Industry and Development, Alberta Bureau of Statistics
Dept. of Labour
B.C.:—Dept. of Finance, Housing Commissioner
Dept. of Labour, Factory Inspection Branch
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Municipal Affairs, Planning Division

Dept. of Transport
Information Services (secondary canals)
National Research Council
Division of Mechanical Engineering
St. Lawrence Seaway Authority (St. Lawrence—Great Lakes canals)
Dominion Bureau of Statistics

CANALS

Dept. of Trade and Commerce
Economics Branch
Dominion Bureau of Statistics

CHEMICALS

Que.:—Dept. of Natural Resources
Ont.:—Ontario Research Foundation

Dept. of Citizenship and Immigration
Citizenship Branch (publications)
Information Division
National Film Board

CITIZENSHIP
See also
"Population"

Ont.:—Dept. of Provincial Secretary and Citizenship

Sources for Federal Data	Subject	Sources for Provincial Data
Emergency Measures Organization Dept. of Defence Production Emergency Supply Planning Branch Dept. of National Health and Welfare Emergency Health Services Emergency Welfare Services Royal Canadian Mounted Police	CIVIL DEFENCE	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Municipal Affairs Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Attorney General, Emergency Measures Organization Man.:—Dept. of Provincial Secretary, Civil Defence Branch Sask.:—Emergency Measures Organization Executive Council Alta.:—Emergency Measures Organization B.C.:—Dept. of Provincial Secretary, Provincial Co-ordinator
Dept. of Transport Meteorological Branch, Toronto National Research Council Division of Building Research, (Climatological Atlas of Canada, National Building Code)	CLIMATE	Que.:—Dept. of Natural Resources, Meteorological Bureau Ont.:—Dept. of Agriculture, Farm Economics and Statistics Branch B.C.:—Dept. of Agriculture
Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Mineral Resources Division Dominion Coal Board Dominion Bureau of Statistics	COAL	N.S., Ont.:—Depts. of Mines N.B.:—Dept. of Lands and Mines Que.:—Dept. of Natural Resources Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals Alberta Research Council B.C.:—Dept. of Mines and Petroleum Resources
Dept. of Justice Director of Investigation and Research Restrictive Trade Practices Commission	COMBINES	
Dept. of Transport Telecommunications and Electronics Branch (radio aids, aeronautical and marine navigation) Information Services Meteorological Branch (meteorological communications) Board of Transport Commissioners (regulation of certain telegraph and telephone companies) Canadian Broadcasting Corporation (radio and television broadcasting) Canadian Overseas Telecommunication Corporation Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Queen's Printer (International Telecommunication Union) Dominion Bureau of Statistics	COM-MUNICATIONS <i>see also</i> "Postal Service"	Nfld.:—Dept. of Economic Development Board of Public Utilities P.E.I.:—Tourist and Information Bureau N.S.:—Board of Commissioners of Public Utilities N.B.:—Travel Bureau Que.:—Dept. of Transportation and Communications Ont.:—Ontario Telephone Service Commission Ontario Provincial Police, Radio Communications Branch Man.:—Manitoba Telephone System Sask.:—Saskatchewan Government Telephones Alta.:—Alberta Government Telephones B.C.:—Dept. of Commercial Transport

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Central Mortgage and Housing Corporation Dept. of National Health and Welfare (social welfare and recreation) Dept. of Northern Affairs and National Resources Northern Administration Branch National Capital Commission Information Division (general information on the Plan for the National Capital of Canada) National Film Board</p>	COMMUNITY PLANNING	<p>Nfld.:—Dept. of Municipal Affairs and Supply P.E.I.:—Dept. of Industry and Natural Resources Dept. of Education, Physical Fitness Division N.S.:—Dept. of Municipal Affairs N.B.:—Dept. of Education, Physical Education and Recreational Branch Dept. of Municipal Affairs Que.:—Dept. of Municipal Affairs Industrial Development Bureau Economic Advisory Council Ont.:—Dept. of Municipal Affairs, Community Planning Branch Dept. of Education, Community Programmes Branch Man.:—Dept. of Industry and Commerce, Regional Development Branch Sask.:—Dept. of Municipal Affairs, Community Planning Branch Executive Council, Economic Advisory and Planning Board Centre for Community Studies, University of Saskatchewan, Saskatoon Alta.:—Dept. of Municipal Affairs, Town and Rural Planning Branch B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Municipal Affairs, Regional Planning Division Dept. of Education, Community Programmes Branch Lower Mainland Regional Planning Board</p>
<p>Dept. of Northern Affairs and National Resources National Parks Branch, Canadian Wildlife Service Northern Administration Branch Dept. of Agriculture Agricultural Rehabilitation and Development Division Information Division Economics Division Dept. of Fisheries Information and Consumer Service Dept. of Forestry Information and Technical Services National Capital Commission National Film Board</p>	CONSERVATION	<p>Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Tourism, Game and Fish Dept. of Natural Resources Ont.:—Dept. of Lands and Forests, Conservation Branch Ontario Agricultural College, Guelph Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources Dept. of Agriculture, Conservation and Development Branch B.C.:—Dept. of Lands, Forests and Water Resources Dept. of Recreation and Conservation</p>
<p>Privy Council Office Dept. of Justice Dept. of Secretary of State Library of Parliament Public Archives Queen's Printer (Statutes of Canada, Hansard, etc.)</p>	CONSTITUTION	<p>All Provinces except B.C.:—Depts. of Attorney General B.C.:—Provincial Secretary</p>
<p>Dominion Bureau of Statistics</p>	CONSUMER PRICE INDEX See also "Cost of Living"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Economics Division Central Mortgage and Housing Corporation (mortgage-lending activities) Dept. of Fisheries Economics Service Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo co-operatives) Dept. of Secretary of State Companies and Corporations Branch	CO-OPERATIVES (including Credit Unions)	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Agriculture Que.:—Dept. of Agriculture Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture, Co-operatives Branch Man.:—Dept. of Agriculture and Conservation, Co-operative Services Branch Sask.:—Dept. of Co-operation and Co-operative Development Alta.:—Dept. of Industry and Development, Co-operative Activities Branch B.C.:—Attorney-General's Dept., Registrar of Companies
Dominion Bureau of Statistics (wholesale and retail prices and consumer price index)	COST OF LIVING	Nfld.:—Dept. of Municipal Affairs and Supply Man.:—Dept. of Industry and Commerce, Business Research Branch Sask.:—Dept. of Labour Alta.:—Dept. of Industry and Development, Alberta Bureau of Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Canada Council Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources National Parks Branch National Museum of Canada Northern Administration Branch Dept. of Veterans Affairs (veterans only) National Gallery of Canada (films, reference library) Public Archives National Film Board	CREATIVE ARTS AND HANDICRAFTS	Nfld.:—Dept. of Education P.E.I.:—Dept. of Provincial Secretary, Tourist and Information Branch Dept. of Education, Physical Fitness Division N.S.:—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art Dept. of Education, Physical Fitness Division N.B.:—Dept. of Industry and Development, Handicraft Division The New Brunswick Museum Dept. of Education, Physical Education and Recreation Branch Que.:—Dept. of Cultural Affairs Dept. of Agriculture (rural handicrafts) Ont.:—Dept. of Education, Community Programmes Branch Dept. of Agriculture, Home Economics Service Man.:—Dept. of Agriculture and Conservation, Extension Service Sask.:—Dept. of Education, Continuing Education Branch Saskatchewan Arts Board Alta.:—Dept. of Provincial Secretary (cultural activities) B.C.:—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programmes Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Justice Office of the Commissioner of Penitentiaries National Parole Board Dept. of National Health and Welfare Research and Statistics Division National Film Board Dominion Bureau of Statistics	CRIME AND DELINQUENCY	(All Provinces:—Depts. of Attorney General <i>Additional:—</i> Nfld., N.S., Alta.:—Depts. of Public Welfare P.E.I.:—Dept. of Welfare and Labour Que.:—Dept. of Family and Social Welfare Dept. of Youth Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Reform Institutions Sask.:—Dept. of Social Welfare and Rehabilitation B.C.:—Dept. of Social Welfare
See pp. 117-122 of this volume for a list of Crown corporations giving the functions of each and the Cabinet Minister through which each reports to Parliament.	CROWN CORPORATIONS	(For information with regard to individual Crown corporations apply as follows:— Nfld.:—Dept. of Economic Development Dept. of Public Works P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry Ont.:—Dept. of Provincial Secretary Man.:—Treasury Dept. Dept. of Public Utilities Sask.:—Government Finance Office Alta.:—Dept. of Industry and Development B.C.:—Attorney-General's Dept.
Bank of Canada Dept. of Finance Royal Canadian Mint Public Archives	CURRENCY	
Dept. of Agriculture Production and Marketing Branch Dairy Products Division Health of Animals Branch Research Branch Animal Research Institute Dairy Technology Research Institute Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	DAIRYING	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S.:—Depts. of Agriculture N.B., Ont., Alta., B.C.:—Depts. of Agriculture, Dairy Branches (<i>also</i> Milk Industry Board of Ont. and Milk Control Board for B.C.) Que.:—Dept. of Agriculture and Colonization, Dairy Products Branch Dept. of Industry and Commerce, Bureau of Statistics Man.:—Dept. of Agriculture and Conservation, Dairy Branch Sask.:—Dept. of Agriculture, Animal Industry Branch Milk Control Board
	DEATHS See "Vital Statistics"	
Dept. of National Defence Director of Public Relations Directorate of Naval Information Directorate of Public Relations (Army) Directorate of Public Relations (RCAF) Defence Research Board Dept. of Defence Production Canadian Commercial Corporation Defence Construction (1951) Limited Canadian Arsenals Limited Dept. of External Affairs (NATO)	DEFENCE See also "Civil Defence"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Defence Production	DEFENCE PRODUCTION	
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Veterans Affairs (war disabled veterans)	DISABLED PERSONS ALLOWANCES	Nfld.:—The Old Age Assistance Board P.E.I.:—Dept. of Welfare and La- bour, Director of Disabled Per- sons Allowances N.S.:—Director of Old Age Assist- ance N.B.:—Dept. of Youth and Welfare, Director of Disabled Persons Allowances Que.:—Quebec Social Allowances Commission Ont.:—Dept. of Public Welfare, Welfare Allowances Branch Man.:—The Old Age Assistance and Blind Persons' Allowances Board Sask.:—Dept. of Social Welfare and Rehabilitation, Director of Public Assistance Alta.:—Dept. of Public Welfare, Pensions Board B.C.:—The Disabled Persons Al- lowances Board
Bank of Canada Central Mortgage and Housing Corporation Dept. of Agriculture Economics Division Dept. of Citizenship and Immigration Canadian Citizenship Branch Dept. of Defence Production Economics and Statistics Branch Dept. of Finance Financial Affairs Division Dept. of Fisheries Economics Service Dept. of Forestry Economics Division Dept. of Labour Economics and Research Branch Legislation Branch Dept. of Mines and Technical Sur- veys Mineral Resources Division Dept. of National Health and Welfare Research and Statistics Division Dept. of Northern Affairs and Na- tional Resources Administration Services Northern Administration Branch Northern Co-ordination and Re- search Water Resources Branch Dept. of Public Works Economic Studies Branch Dept. of Trade and Commerce Economics Branch Dept. of Transport Economics Policy Branch Fisheries Research Board Public Archives (early data) Queen's Printer (UNESCO) Dominion Bureau of Statistics	ECONOMIC AND SOCIAL RESEARCH	Nfld.:—Dept. of Economic Develop- ment P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry Nova Scotia Research Foundation N.B.:—Dept. of Industry and Development, Office of the Eco- nomic Advisor Que.:—Dept. of Industry and Com- merce, Economic Research Bur- eau, Bureau of Statistics, In- dustrial Commission Branch Ont.:—Dept. of Economics and Development Dept. of Agriculture, Farm Eco- nomics and Statistics Branch Dept. of Municipal Affairs, Com- munity Planning Branch Alcoholism and Drug Addiction Research Foundation of Ontario Man.:—Dept. of Industry and Com- merce, Business Research Branch Manitoba Development Authority Treasury Dept., Economic Re- search Division Dept. of Agriculture and Con- servation, Economic Division Sask.:—Executive Council Economic Advisory and Planning Board Dept. of Industry and Information Government Finance Office Dept. of Co-operation and Co- operative Development, Re- search and Statistical Division Centre for Community Studies, University of Saskatchewan, Saskatoon Alta.:—Dept. of Industry and De- velopment B.C.:—Dept. of Industrial Develop- ment, Trade, and Commerce, Bureau of Economics and Sta- tistics

Sources for Federal Data	Subject	Sources for Provincial Data
<p> Dominion Bureau of Statistics Canada Council Canadian Broadcasting Corporation (educational broadcasts) Dept. of Citizenship and Immigration Citizenship Branch (immigrants) Information Division (Indians) Dept. of Finance (university grants) Dept. of Fisheries Information and Consumer Service Dept. of Forestry Information and Technical Services Dept. of Labour Vocational Training Branch Dept. of National Defence Director of Education (service dependants' schools) Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Veterans Affairs (veterans and children of war dead) National Gallery of Canada (school broadcasts, lectures) National Research Council Division of Administration and Awards (science and engineering students registered in Canadian graduate schools) Queen's Printer (UNESCO) </p>	<p> EDUCATION See also "Motion Pictures" and "Photographic Material" </p>	<p> All Provinces:—Depts. of Education (technical, visual, audio and all other phases of education) Additional:—Alta.:—Dept. of Labour, Apprenticeship Board </p>
<p> Chief Electoral Office Library of Parliament </p>	<p> ELECTIONS </p>	<p> Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., Ont.:—Depts. of Provincial Secretary N.B.:—Dept. of Finance Que.:—Chief Returning Officer Man., B.C.:—Chief Electoral Officers Sask., Alta.:—Clerks of the Executive Councils </p>
<p> Dept. of Northern Affairs and National Resources Water Resources Branch National Energy Board National Research Council Radio and Electrical Engineering Division Northern Canada Power Commission National Film Board Dominion Bureau of Statistics </p>	<p> ELECTRIC POWER </p>	<p> Nfld.:—Dept. of Economic Development, Power Commission P.E.I.:—Public Utility Commission N.S., Alta.:—Power Commissions N.B.:—New Brunswick Electric Power Commission Que.:—Hydro-Electric Commission Dept. of Natural Resources Dept. of Agriculture and Colonization, Rural Electrification Bureau Ont.:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Man.:—Manitoba Hydro Dept. of Public Utilities Sask.:—Saskatchewan Power Corporation B.C.:—Dept. of Lands, Forests and Water Resources British Columbia Hydro and Power Authority British Columbia Energy Board Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics </p>

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Labour Economics and Research Branch Civil Service Commission (opportunities for and conditions of employment in the Federal Civil Service) Dept. of Citizenship and Immigration Information Division (immigrants) National Employment Service Dominion Bureau of Statistics	EMPLOYMENT	All Provinces:—Depts. of Agriculture (farm labour) Additional:—Nfld., N.S., N.B., Sask.:—Depts. of Labour Que.:—Dept. of Labour, Provincial Employment Bureau Ont.:—Dept. of Economics and Development Dept. of Labour Civil Service Commission Man.:—Dept. of Labour Dept. of Industry and Commerce, Business Research Branch Alta.:—Dept. of Labour Dept. of Industry and Development B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Northern Affairs and National Resources Northern Administration Branch (education, welfare, handicrafts, livelihood) Northern Co-ordination and Research National Museum of Canada (historical and archaeological information, handicrafts) Dept. of National Health and Welfare (health and hospital services) Royal Canadian Mounted Police (field duties)	ESKIMOS	Nfld.:—Dept. of Public Welfare, Division of Northern Labrador Affairs
Dept. of Trade and Commerce Canadian Government Exhibition Commission Trade Fairs and Missions Branch Trade Publicity Branch Central Mortgage and Housing Corporation (housing exhibits) Dept. of Agriculture Livestock Division Dept. of Fisheries Information and Consumer Service Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division Dept. of National Health and Welfare Information Division Dept. of Northern Affairs and National Resources National Museum of Canada Editorial and Information Division National Capital Commission National Capital Plan (exhibits and information) National Gallery of Canada (paintings, etc.) National Film Board	EXHIBITIONS	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce Office of Provincial Secretary Dept. of Cultural Affairs Ont.:—Most Ontario Departments organize exhibitions Man.:—Dept. of Agriculture and Conservation, Extension Service Dept. of Industry and Commerce Sask.:—Dept. of Agriculture Dept. of Industry and Information Alta.:—Dept. of Provincial Secretary Dept. of Agriculture B.C.:—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce
Dept. of External Affairs Queen's Printer (International Organizations Publications)	EXTERNAL AFFAIRS See also "Trade"	
Dept. of National Health and Welfare Dept. of Citizenship and Immigration (assistance to families entering Canada not yet eligible for family allowances)	FAMILY ALLOWANCES	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Production and Marketing Branch Plant Products Division Plant Protection Division Research Branch Genetics and Plant Breeding Research Institute Plant Research Institute Dept. of Trade and Commerce Agriculture and Fisheries Branch National Research Council Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products) Queen's Printer (FAO) National Film Board Dominion Bureau of Statistics	FIELD CROPS	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce, Bureau of Statistics Ont., Alta., B.C.:—Depts. of Agriculture, Field Crops Branch Man.:—Dept. of Agriculture and Conservation, Soils and Crops Branch Sask.:—Dept. of Agriculture, Plant Industry Branch
Dept. of Finance Bank of Canada Dominion Bureau of Statistics	FINANCE See also "Taxation"	Nfld., N.B., B.C.:—Depts. of Finance P.E.I., Man., Sask., Alta.:—Depts. of Provincial Treasurer N.S.:—Dept. of Finance and Economics. Que.:—Dept. of Finance Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Treasury Dept. Dept. of Economics and Development, Administration Branch and Financial Research Branch
Dept. of Forestry Forest Research Branch Forest Products Research Branch (forest products fire retardants) Board of Transport Commissioners (forest-fire protection along railway lines) Dept. of Northern Affairs and National Resources National Parks Branch Northern Administration Branch Dept. of Public Works Fire Prevention Branch (fire loss statistics) National Research Council Fire Research Section	FIRE PREVENTION	All Provinces:—Provincial Fire Marshals (for urban and rural fire losses) Additional:—Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests, Forest Protection Service Dept. of Municipal Affairs, Fire Commissioner Ont.:—Dept. of Lands and Forests, Forest Protection Branch Dept. of Public Works, Fire Prevention Officer Dept. of Attorney General, Office of the Fire Marshal Man.:—Dept. of Mines and Natural Resources Dept. of Labour, Fire Commissioner Sask.:—Dept. of Natural Resources Dept. of Labour, Fire Commissioner Alta.:—Dept. of Lands and Forests Dept. of Provincial Secretary B.C.:—Dept. of Lands, Forests and Water Resources
Dept. of Fisheries Information and Consumer Service Canadian Broadcasting Corporation Farm and Fisheries Department Dept. of Finance Fisheries Improvement Loans Act Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo fishing co-operatives) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dept. of Veterans Affairs (veterans settled as commercial fishermen) Fisheries Research Board Queen's Printer (FAO) Unemployment Insurance Commission (unemployment insurance for fishermen) National Film Board	FISHERIES	Nfld., P.E.I., N.B.:—Depts. of Fisheries N.S.:—Dept. of Trade and Industry, Fisheries Division Que.:—Dept. of Tourism, Game and Fish Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Lands and Forests, Fish and Wildlife Branch Man.:—Dept. of Mines and Natural Resources, Fisheries Branch Sask.:—Dept. of Natural Resources, Fisheries Branch Alta.:—Dept. of Lands and Forests, Fish and Game Branch B.C.:—Dept. of Recreation and Conservation Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare (for standards and methods of control of quality or potency and safety of food and drugs) Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.) Dept. of Fisheries (standards for fish products)	FOOD AND DRUGS See also "Nutrition"	
	FOREIGN AFFAIRS See "External Affairs"	
Dept. of Finance Bank of Canada	FOREIGN EXCHANGE	
Dept. of Forestry Economics Division Forest Research Branch Forest Products Research Branch Dept. of Trade and Commerce Commodities Branch National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs) Dominion Bureau of Statistics	FOREST RESOURCES AND INDUSTRIES	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Que., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Forestry Branch Sask.:—Dept. of Natural Resources, Forestry Branch Dept. of Industry and Information Saskatchewan Timber Board B.C.:—Dept. of Lands, Forests and Water Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
	FRUIT See "Horticulture"	
	FUEL See "Coal", "Oil and Natural Gas" and "Electric Power"	
Dept. of Agriculture Production and Marketing Branch Livestock Division (grading) Research Branch (production) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dominion Bureau of Statistics	FUR FARMING See also "Trapping"	Nfld.:—Dept. of Mines, Agriculture, and Resources Dept. of Economic Development P.E.I., N.B., Alta., B.C.:—Depts. of Agriculture N.S., Ont.:—Depts. of Lands and Forests Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce, Bureau of Statistics Man.:—Dept. of Mines and Natural Resources, Game Branch Sask.:—Dept. of Natural Resources Saskatchewan Fur Marketing Service

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Mines and Technical
Surveys
Geographical Branch
Canadian Permanent Committee
on Geographical Names
Dept. of Agriculture
Soils Research Institute
Fisheries Research Board (ocean-
ography)
Public Archives
National Film Board

GEOGRAPHY

Nfld.:—Dept. of Mines, Agriculture,
and Resources
P.E.I.:—Travel Bureau
N.S.:—Dept. of Mines
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Lands and Forests
Dept. of Industry and Commerce,
Economic Research Bureau,
Drafting Division
Dept. of Natural Resources
Ont.:—Dept. of Lands and Forests,
Lands and Surveys Branch
Dept. of Mines
Ontario Agricultural College
Dept. of Economics and Develop-
ment, Special Research and
Surveys Branch
Dept. of Municipal Affairs, Com-
munity Planning Branch
Man.:—Dept. of Mines and Natural
Resources
Sask.:—Dept. of Natural Resources
Dept. of Industry and Information
Alta.:—Dept. of Lands and Forests
University of Alberta
B.C.:—Dept. of Lands, Forests and
Water Resources

Dept. of Mines and Technical
Surveys
Geological Survey of Canada

GEOLOGY

Nfld.:—Dept. of Mines, Agriculture,
and Resources
P.E.I.:—Dept. of Industry and
Natural Resources
N.S.:—Dept. of Mines
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Natural Resources,
Geological Surveys Branch
Dept. of Agriculture
Ont.:—Dept. of Mines, Geological
Branch
Man.:—Dept. of Mines and Natural
Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Alta.:—Dept. of Mines and Minerals
University of Alberta
B.C.:—Dept. of Mines and Petro-
leum Resources

Dept. of the Secretary of State
(federal-provincial channel of
communication)
Chief Electoral Office (Electoral Act
and voters lists)
Dept. of Citizenship and Immigration
Citizenship Branch (publications)
Information Division
Dept. of Northern Affairs and Na-
tional Resources (Yukon and
N.W.T.)
Queen's Printer (distribution and
sale of statutory orders and
regulations)
Library of Parliament
Privy Council Office (appointments,
orders in council, statutory
orders and regulations)
Public Archives (early official rec-
ords)

GOVERNMENT
For Senate of
Canada and House
of Commons
see "Parliament"

Nfld.:—Dept. of Provincial Affairs
P.E.I., N.S., N.B., Ont., Man.,
Sask., Alta., B.C.:—Depts. of
Provincial Secretary
Que.:—Office of Provincial Secretary

Dept. of National Health and
Welfare
Queen's Printer (WHO)
National Film Board
Dominion Bureau of Statistics

HEALTH
For Health of
Veterans
see "Veterans
Affairs"

Nfld., P.E.I., N.B., Que., Ont.,
Man.:—Depts. of Health
N.S., Sask., Alta.:—Depts. of
Public Health
B.C.:—Dept. of Health Services and
Hospital Insurance

Sources for Federal Data	Subject	Sources for Provincial Data
Public Archives Dept. of National Defence Naval Historian Directorate of History (Army) Air Historian Dept. of Northern Affairs and National Resources National Parks Branch (historic sites and monuments) National Museum of Canada Canadian War Museum National Aviation Museum Archivist for the Northwest Terri- tories Council Dept. of Veterans Affairs (war memorials) Library of Parliament National Capital Commission (His- torical Section) National Gallery of Canada (pro- vincial and federal) National Film Board Dominion Bureau of Statistics	HISTORY	Nfld.:—Legislative Library Memorial University Gosling Memorial Library Dept. of Provincial Affairs, Public Archives and Museum P.E.I.:—Travel Bureau, Legislative Librarian N.S.:—Public Archives N.B.:—Legislative Library Que.:—Office of Provincial Secretary, Provincial Archives Provincial Library Dept. of Cultural Affairs Ont.:—Legislative Library Dept. of Travel and Publicity, Historical Branch Dept. of Public Records and Archives Man.:—Provincial Library and Ar- chives Sask.:—Legislative Library, Ar- chives Division Alta.:—Archives, Provincial Library Dept. of Provincial Secretary B.C.:—Dept. of Provincial Secretary, Provincial Librarian and Ar- chivist
Dept. of Agriculture Production and Marketing Branch (gradings and inspection) Fruit and Vegetable Division Plant Products Division Plant Protection Division Research Branch Genetics and Plant Breeding Research Institute Plant Research Institute Queen's Printer (FAO)	HORTICULTURE	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., Ont.:—Depts. of Agriculture N.S., N.B., Alta., B.C.:—Depts. of Agriculture, Horticultural Branches Que.:—Dept. of Agriculture and Colonization, Horticultural Branch Man.:—Dept. of Agriculture and Conservation Sask.:—Dept. of Agriculture, Plant Industry Branch
Dept. of National Health and Welfare Dept. of Northern Affairs and Na- tional Resources Northern Administration Branch (Yukon and N.W.T.)	HOSPITAL INSURANCE	Nfld., Que.:—Depts. of Health P.E.I.:—Dept. of Health Hospital Services Commission N.S.:—Hospital Services Planning Commission N.B.:—Dept. of Health, Hospital Services Branch Ont.:—Ontario Hospital Services Commission Man.:—Hospital Services Plan Sask., Alta.:—Depts. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance
Dept. of National Health and Welfare Dept. of Citizenship and Immigration Information Division (Indians) Dept. of National Defence Office of the Surgeon General (Armed Forces hospitals) Dept. of Veterans Affairs (veterans hospitals) Queen's Printer (WHO) Dominion Bureau of Statistics	HOSPITALS	Nfld., N.B., Que., Man.:—Depts. of Health P.E.I.:—Dept. of Health Hospital Services Commission N.S.:—Hospital Services Planning Commission Ont.:—Ontario Hospital Services Commission Sask., Alta.:—Depts. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance
	HOUSE OF COMMONS See "Parliament"	

Sources for Federal Data

Subject

Sources for Provincial Data

Central Mortgage and Housing Corporation (long-term mortgage loans for new houses and low-rental housing projects; National Housing Act financing; loans to universities for resident student accommodation; loans to municipalities for sewage treatment projects; mortgage lending; insurance of loans)
 Dept. of Northern Affairs and National Resources
 Northern Administration Branch (Eskimo housing)
 Dept. of Veterans Affairs (home construction assistance for veterans)
 National Research Council
 Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)
 Dominion Bureau of Statistics

HOUSING

Nfld.:—Dept. of Municipal Affairs
 P.E.I.:—Dept. of Industry and Natural Resources
 N.S.:—Nova Scotia Housing Commission
 Que.:—Dept. of Agriculture and Colonization, Quebec Farm Credit Bureau
 Ont.:—Dept. of Economics and Development, Housing Branch
 Man.:—Dept. of Industry and Commerce
 Manitoba Housing Commission
 Sask.:—Dept. of Social Welfare, Housing Branch
 B.C.:—Dept. of Finance, Housing Commissioner

Dept. of Citizenship and Immigration Information Division
 Dept. of National Health and Welfare
 Quarantine, Immigration Medical and Sick Mariners Division
 Dominion Bureau of Statistics

IMMIGRATION

P.E.I.:—Dept. of Industry and Natural Resources
 Ont.:—Dept. of Economics and Development, Economics Branch and Immigration Division
 Man.:—Dept. of Agriculture and Conservation
 Sask.:—Dept. of Social Welfare
 Alta.:—Dept. of Industry and Development
 B.C.:—British Columbia House, London, England

INCOME TAX
 See "Taxation"

Dept. of Citizenship and Immigration
 Indian Affairs Branch
 Dept. of National Health and Welfare (health and hospital services)
 Dept. of Northern Affairs and National Resources
 Northern Administration Branch
 National Museum of Canada (historical and archaeological information)

INDIANS

Nfld.:—Dept. of Public Welfare (Indians in Labrador)
 Que.:—Dept. of Tourism, Game and Fish
 Ont.:—Dept. of Public Welfare
 Man.:—Dept. of Welfare, Community Development Branch
 Sask.:—Provincial Committee on Minority Groups
 Executive Council
 B.C.:—Dept. of Labour, Provincial Advisory Committee on Indian Affairs

Dept. of Industry
 National Design Branch
 Dept. of Secretary of State
 Patent and Copyright Office

INDUSTRIAL
 DESIGN

Man.:—Dept. of Industry and Commerce, Manitoba Design Institute

INDUSTRIAL
 DEVELOPMENT
 See
 "Manufacturing"

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Insurance (Dominion, British and foreign companies, Federal Civil Service insurance) Central Mortgage and Housing Corporation (insures loans made under National Housing Act) Dept. of Agriculture Production and Marketing Branch (crop insurance) Dept. of Labour Annuities Branch Dept. of Trade and Commerce Export Credits Insurance Corporation Dept. of Veterans Affairs Veterans Welfare Services Dominion Bureau of Statistics (summary statistics of all types of insurance)	<div>INSURANCE— LIFE, FIRE, ETC. For Unemployment Insurance see "Labour" and for Hospital Insurance "Hospital Insurance"</div>	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., B.C.:—Superintendents of Insurance Que.:—Finance Dept., Insurance Branch Ont.:—Dept. of Insurance Man.:—Superintendent of Insurance Manitoba Crop Insurance Agency Sask.:—Superintendent of Insurance, Government Insurance Office Alta.:—Dept. of Provincial Secretary, Supervisor of Insurance
Dept. of Mines and Technical Surveys Mines Branch Mineral Resources Division Dept. of Trade and Commerce Economics Branch Dominion Bureau of Statistics	<div>IRON AND STEEL</div>	Nfld.:—Dept. of Mines, Agriculture, and Resources N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Industry and Commerce, Bureau of Statistics Dept. of Natural Resources Ont.:—Dept. of Economics and Development, Trade and Industry Branch and Special Research and Surveys Branch Man.:—Dept. of Mines and Natural Resources Dept. of Industry and Commerce Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals Dept. of Industry and Development Research Council of Alberta B.C.:—Dept. of Mines and Petroleum Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Justice Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dominion Bureau of Statistics	<div>JUSTICE</div>	All Provinces:—Depts. of Attorney General
Dept. of Labour Information Branch Legislation Branch Economics and Research Branch Canada Labour Relations Board Vocational Training Branch Civilian Rehabilitation Branch Industrial Relations Branch (conciliation of labour disputes, payment of fair wages on government contracts, promotion of labour-management co-operation, fair employment practices, female employees equal pay, and annual vacations with pay) International Labour Organization Branch Special Services Branch Women's Bureau Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of National Health and Welfare (occupational health) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) National Employment Service National Research Council Division of Administration and Awards (recruitment and salary levels of scientific and technical personnel) Unemployment Insurance Commission Dominion Bureau of Statistics	<div>LABOUR See also "Workmen's Compensation"</div>	Nfld., P.E.I., N.S., N.B., Man., Sask., Alta.:—Depts. of Labour Que.:—Dept. of Labour Provincial Bureau of Statistics Economic Research Bureau Ont.:—Dept. of Labour Dept. of Economics and Development, Economics Branch B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data

Dept. of Mines and Technical Surveys
 Surveys and Mapping Branch
 Dept. of Agriculture
 Agricultural Rehabilitation and
 Development Division
 Dept. of Citizenship and Immigration
 Information Division (land settle-
 ment)
 Dept. of Northern Affairs and Na-
 tional Resources
 Northern Administration Branch
 (Yukon and N.W.T.)
 Dept. of Transport
 Real Estate Branch
 Dept. of Veterans Affairs
 Veterans Land Administration
 Public Archives (early data *re* settle-
 ment)

Subject

LANDS AND
 LAND
 SETTLEMENT

Sources for Provincial Data

Nfld.:—Dept. of Mines, Agriculture,
 and Resources
 P.E.I.:—Commissioner of Public
 Lands
 N.S.:—Dept. of Agriculture, Land
 Settlement Board
 N.B.:—Dept. of Lands and Mines
 Que.:—Dept. of Lands and Forests
 Dept. of Agriculture and Coloniz-
 ation
 Ont., Alta.:—Depts. of Lands and
 Forests
 Man.:—Dept. of Mines and Natural
 Resources, Lands Branch
 Sask.:—Dept. of Agriculture, Lands
 Branch
 Attorney General, Land Titles
 B.C.:—Dept. of Agriculture, Land
 Clearing
 Dept. of Lands, Forests and Water
 Resources

Royal Canadian Mounted Police
*(Enforces Federal Statutes in all
 parts of Canada; in the provinces,
 exclusive of Quebec and Ontario, it
 carries out, under contract, enforce-
 ment of the Criminal Code and Pro-
 vincial Statutes and polices a number
 of municipalities; is the only law-
 enforcement body in the Yukon and
 N.W.T.)*

LAW
 ENFORCEMENT

All Provinces:—Depts. of Attorney
 General

Clerk of the Senate of Canada
 Clerk of the House of Commons
 Dept. of Justice
 Dept. of Northern Affairs and
 National Resources (Yukon and
 N.W.T.)
 Queen's Printer (distribution and
 sale of the Statutes of Canada
 and texts of federal legislation)
 Library of Parliament
 Privy Council Office
 For Acts administered by individual
 Federal Depts., see pp. 123-127
 of this volume.

LEGISLATION
 For
 Statutory Orders
 and Regulations
 see "Government"

All Provinces except Man. and
 B.C.:—Depts. of Attorney Gen-
 eral
 Additional:—Ont.:—The Queen's
 Printer (distribution and sale
 of the Statutes of Ontario and
 various Acts)
 Man.:—Legislative Council
 B.C.:—Dept. of Provincial Secretary

LIBRARIES
 See "Bibliography"

Chief Electoral Office (for local
 referendum under Canada Tem-
 perance Act)
 Dept. of Northern Affairs and
 National Resources
 Northern Administration Branch
 (Yukon and N.W.T.)
 Dept. of Secretary of State
 Protocol Branch
 Dominion Bureau of Statistics

LIQUOR
 CONTROL

Nfld.:—Board of Liquor Control
 P.E.I., Man.:—Liquor Control Com-
 mission
 N.S.:—Liquor Commission
 Que.:—Liquor Board
 N.B., Ont., Alta., B.C.:—Liquor
 Control Boards
 Sask.:—Liquor Board, Liquor
 Licensing Commission

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Production and Marketing Branch Livestock Division Health of Animals Branch Contagious Diseases Control Meat Inspection, Animal Pathology Laboratory Research Branch Animal Research Institute Canadian Broadcasting Corporation Farm and Fisheries Department Queen's Printer (FAO) National Film Board Dominion Bureau of Statistics	LIVESTOCK	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.B., Ont.:—Depts. of Agriculture, Livestock Branches N.S.:—Dept. of Agriculture, Animal Husbandry Branch Que.:—Dept. of Agriculture and Colonization, Animal Products Branch Dept. of Industry and Commerce, Bureau of Statistics Man.:—Dept. of Agriculture and Conservation, Livestock Branch Sask.:—Dept. of Agriculture, Animal Industry Branch Alta., B.C.:—Provincial Bureaus of Statistics Depts. of Agriculture, Livestock Branches
Dominion Bureau of Statistics Bank of Canada Industrial Development Bank Dept. of Defence Production (for defence items) Dept. of Finance (Small Businesses Loans Act) Dept. of Industry Industrial Promotion Branch National Design Branch Dept. of Secretary of State Companies and Corporations Branch Dept. of Trade and Commerce Economics Branch National Research Council Canadian Patents and Development Limited (utilization of new scientific processes) National Film Board	MANUFACTURING See also "Crown Corporations"	Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Finance Dept. of Industry and Development Que.:—Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Economics and Development, Trade and Industry Branch and Special Research and Surveys Branch Man.:—Dept. of Industry and Commerce Sask.:—Economic Advisory and Planning Board Dept. of Industry and Information Alta.:—Dept. of Industry and Development Alberta Bureau of Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Mines and Technical Surveys Surveys and Mapping Branch Marine Sciences Branch Geological Survey Geographical Branch Dominion Observatories Mineral Resources Division Dept. of Agriculture (soil survey and economics survey maps) Dept. of Fisheries Information and Educational Service (fisheries maps) Dept. of Forestry Information and Technical Services (forestry maps) Dept. of Transport (meteorological maps) National Capital Commission (planning maps) National Research Council Division of Building Research Climatological Atlas of Canada Public Archives (maps relating to history and cartography) Dominion Bureau of Statistics (economic and census maps)	MAPS AND CHARTS	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Public Works and Highways N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Natural Resources Dept. of Industry and Commerce, Drafting Division Dept. of Agriculture Ont.:—Dept. of Mines Dept. of Lands and Forests Dept. of Highways Dept. of Travel and Publicity Man.:—Dept. of Mines and Natural Resources, Surveys Branch Sask.:—Dept. of Natural Resources Dept. of Industry and Information Alta.:—Dept. of Lands and Forests Alberta Travel Bureau B.C.:—Dept. of Lands, Forests and Water Resources

Sources for Federal Data

Subject

Sources for Provincial Data

MARRIAGES
See "Vital Statistics"

Dept. of Agriculture
Administration Branch
Economics Division
Dept. of Trade and Commerce
Trade Services Branch
Commodities Branch
Dominion Bureau of Statistics

MERCHANDISING

Man.:—Dept. of Industry and Commerce
Sask.:—Dept. of Industry and Information
Alta.:—Dept. of Industry and Development
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mines Branch
Mineral Resources Division
Dept. of Trade and Commerce
Economics Branch
Dominion Bureau of Statistics (for production data)

METALS
See also
"Iron and Steel"

Nfld.:—Dept. of Mines, Agriculture, and Resources
N.S., Ont.:—Depts. of Mines
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Natural Resources
Man.:—Dept. of Mines and Natural Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Alta.:—Dept. of Mines and Minerals
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Mines and Petroleum Resources

METEOROLOGY
See "Climate"

Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mines Branch
Mineral Resources Division
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dominion Bureau of Statistics (for production data)

MINING AND MINERALS

Nfld.:—Dept. of Mines, Agriculture, and Resources
N.S., Ont.:—Depts. of Mines
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Natural Resources
Man.:—Dept. of Mines and Natural Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Alta.:—Dept. of Mines and Minerals
B.C.:—Dept. of Mines and Petroleum Resources

National Film Board
(Produces documentary films, news-reels and short subjects for theatrical, non-theatrical and television distribution; film-strips and photographs for informational, educational and archival purposes; other visual materials devoted to the interpretation of the Canadian scene to audiences both at home and abroad; and maintains a large film preview library for the benefit of government departments and other official bodies.)

MOTION PICTURES

Canadian Broadcasting Corporation
(Produces 16 mm. films for broadcasting over its own networks and stations. Some of these are available for export sales.)

National Gallery of Canada (library of films on art)

Nfld., P.E.I., N.B.:—Purchase films but do not produce them
N.S., Que., Alta., B.C.:—Produce educational or informational films
Ont.:—Dept. of Travel and Publicity, Theatres Branch and Photography Branch (Films are available to the public from several other departments)
Man.:—Dept. of Industry and Commerce
Sask.:—Dept. of Industry and Information
Dept. of Education, Visual Education Branch
Alta.:—Dept. of Industry and Development, Photographic Branch
B.C.:—Dept. of Recreation and Conservation
(All provinces have Motion Picture Censorship Boards. Details available from: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.)

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics Public Finance and Transportation Division Dept. of Finance (municipal grants) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	MUNICIPAL AFFAIRS	Nfld.:—Dept. of Municipal Affairs and Supply P.E.I., N.S., N.B., Que., Ont., Man., Sask., Alta., B.C.:—Depts. of Municipal Affairs
National Gallery of Canada (paintings, sculpture, etc.) Dept. of Northern Affairs and National Resources National Museum of Canada Canadian War Museum National Aviation Museum Laurier House, Ottawa (historical) National Historic Parks Museums Queen's Printer (UNESCO)	MUSEUMS	Nfld.:—Dept. of Provincial Affairs N.S.:—Nova Scotia Museum of Fine Arts, Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax N.B.:—New Brunswick Museum, Saint John Que.:—The Archives, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal Dept. of Cultural Affairs Ont.:—Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions Dept. of Public Records and Archives Man.:—Manitoba Museum, Winnipeg Sask.:—Provincial Museum, Regina Western Development Museum, Saskatoon Alta.:—Provincial Archives, Edmonton B.C.:—Provincial Museum of Natural History and Anthropology, Provincial Archives (including Helmcken House), Victoria Also provincial universities of Sask., Alta., and B.C.
Comptroller of the Treasury Dominion Bureau of Statistics	NATIONAL ACCOUNTS	
Dept. of Transport Marine Services (aids to marine navigation; secondary canals) Telecommunications Branch (radio aids to navigation) Information Services Canadian Maritime Commission Dept. of Mines and Technical Surveys Hydrographic Service Legal Surveys and Aeronautical Charts Division Dept. of Public Works (construction and maintenance of harbour and river works, incl. graving docks and marine engineering generally) Harbours and Rivers Engineering Branch Information Services National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)	NAVIGATION	

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of National Health and Welfare
Nutrition Division
Dept. of Agriculture
Consumer Service
Dept. of Fisheries
Inspection and Consumer Service
Queen's Printer (FAO; WHO)

NUTRITION

Nfld., P.E.I., N.B., Que.:—Depts. of Health
N.S.:—Dept. of Public Health
Ont.:—Dept. of Health
Dept. of Agriculture, Home Economics Service
Man.:—Dept. of Health, Health Education Branch
Sask.:—Dept. of Public Health, Nutrition Division
Alta.:—Dept. of Agriculture, Nutritionist
Dept. of Public Health
B.C.:—Dept. of Health Services and Hospital Insurance

Dept. of Mines and Technical Surveys
Marine Sciences Branch
Dept. of Fisheries
Fisheries Research Board

OCEANOGRAPHY

Que.:—Dept. of Tourism, Game and Fish
Marine Biological Station of Grande Rivière
Fisheries Training School

Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mineral Resources Division
Mines Branch
Dept. of Citizenship and Immigration
Indian Affairs Branch (Indian reserves)
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
National Energy Board
Northern Ontario Pipe Line Crown Corporation
Dominion Bureau of Statistics

OIL AND
NATURAL GAS

Nfld.:—Dept. of Mines, Agriculture, and Resources
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Dept. of Mines
N.B.:—Dept. of Lands and Mines
Ont.:—Dept. of Energy Resources
Dept. of Mines
Man.:—Dept. of Mines and Natural Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Saskatchewan Power Corporation
Alta.:—Dept. of Mines and Minerals, Oil and Gas Conservation Board, Calgary
Alberta Bureau of Statistics
B.C.:—Dept. of Mines and Petroleum Resources

Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dept. of Veterans Affairs (veterans only)

OLD AGE
ASSISTANCE

See also
"Veterans
Affairs"

Nfld., N.S., B.C.:—Old Age Assistance Boards
P.E.I.:—Dept. of Welfare and Labour
N.B.:—Dept. of Youth and Welfare, Old Age and Blind Assistance Board
Que.:—Dept. of Family and Social Welfare, Social Allowance Commission
Ont.:—Dept. of Public Welfare, Welfare Allowances Branch
Man.:—The Old Age Assistance and Blind Persons' Allowances Board
Sask.:—Dept. of Social Welfare and Rehabilitation, Director of Public Assistance
Alta.:—Dept. of Public Welfare, Pensions Board

Dept. of National Health and Welfare

OLD AGE
SECURITY

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources National Parks Branch National Capital Commission National Film Board	PARKS	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Tourism, Game and Fish Ont.:—Dept. of Lands and Forests, Conservation Branch and Parks Branch Man.:—Dept. of Mines and Natural Resources, Forestry Branch Sask.:—Dept. of Natural Resources B.C.:—Dept. of Recreation and Conservation
The Senate The House of Commons Library of Parliament Privy Council Office	PARLIAMENT	Nfld.:—Dept. of Provincial Affairs P.E.I., N.B., Sask., Alta., B.C.:—Legislative Assemblies N.S.:—House of Assembly Que.:—Legislative Council Legislative Assembly Ont.:—Legislative Assembly Clerk of the Legislative Assembly Man.:—Legislative Council
Dept. of Secretary of State Patent and Copyright Office Trade Marks Office Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) National Library (handles all copyright books)	PATENTS, COPYRIGHTS AND TRADE MARKS	
National Film Board Canadian Broadcasting Corporation Information Services (radio and TV program photos) Central Mortgage and Housing Corporation Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division The National Air Photographic Library Dept. of Northern Affairs and National Resources Information Services Division Public Archives (historical)	PHOTOGRAPHIC MATERIAL See also "Motion Pictures" and "Tourist Trade"	Sask.:—Dept. of Industry and Information, Saskatchewan Government Photo Services (Photographs are available from many provincial government departments in all provinces.)
Dominion Bureau of Statistics (for all census and estimated population statistics) Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimos) Public Archives (early census and settlement records)	POPULATION	Nfld.:—Dept. of Health P.E.I.:—Travel Bureau N.S.:—Dept. of Public Health, Vital Statistics Branch N.B.:—Dept. of Health, Vital Statistics Branch Que.:—Dept. of Health, Vital Statistics Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Economics and Development, Economics Branch Man.:—Dept. of Industry and Commerce Dept. of Municipal Affairs Sask.:—Dept. of Public Health, Vital Statistics Branch Legislative Library Alta.:—Dept. of Industry and Development, Provincial Statistician B.C.:—Dept. of Health Services and Hospital Insurance, Director of Vital Statistics Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data

Subject

Sources for Provincial Data

Post Office Department
Public Relations (general postal information)
Accounting Branch (money orders, savings bank, philatelic services, etc.)
Postal Rates and Classification Branch (postage rates, etc.)

POSTAL
SERVICE

Dept. of Agriculture
Production and Marketing Branch
Poultry Division
Health of Animals Branch
Contagious Diseases Control, Meat Inspection, Animal Pathology Laboratory
Research Branch
Animal Research Institute
Canadian Broadcasting Corporation
Farm and Fisheries Department
Queen's Printer (FAO)
Dominion Bureau of Statistics

POULTRY

Nfld.:—Dept. of Mines, Agriculture, and Resources
P.E.I., N.S.:—Depts. of Agriculture
N.B., Alta., B.C.:—Depts. of Agriculture, Poultry Branches
Que.:—Dept. of Agriculture and Colonization, Animal Production Service
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:—Ontario Agricultural College (Guelph), Poultry Division
Man.:—Dept. of Agriculture and Conservation, Extension Service
Sask.:—Dept. of Agriculture, Animal Industry Branch

Dept. of Secretary of State
Protocol Branch

PRECEDENCE
& AND
CEREMONIAL

Nfld.:—Dept. of Provincial Affairs
P.E.I., N.S., B.C.:—Depts. of Provincial Secretary
Man.:—Dept. of Provincial Secretary, Clerk of the Executive Council

Dominion Bureau of Statistics
Dept. of Agriculture
Production and Marketing Branch
Agricultural Stabilization Board
Markets Information
Fisheries Prices Support Board
Queen's Printer (GATT)

PRICES

Ont.:—Dept. of Economics and Development, Special Research and Surveys Branch
Man.:—Dept. of Industry and Commerce
Sask.:—Economic Advisory and Planning Board
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Secretary of State
Administration and Registration Branch
Public Archives (early records)

PUBLIC
DOCUMENTS
(Commissions of Appointment, Proclamations, Land Grants, etc.)

Nfld.:—Dept. of Provincial Affairs
Dept. of Mines, Agriculture, and Resources
P.E.I., N.S., Que., Ont., Man., Sask., B.C.:—Depts. of Provincial Secretary

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dominion Bureau of Statistics</p>	<div>PUBLIC UTILITIES</div> <p>See also "Electric Power"</p>	<p>Nfld.:—Public Utilities Board P.E.I., B.C.:—Public Utilities Com- missions N.S., N.B.:—Boards of Commis- sioners of Public Utilities Que.:—Public Service Board Quebec Hydro-Electric Commission Ont.:—Dept. of Energy Resources The Hydro-Electric Power Com- mission of Ontario Ontario Telephone Service Com- mission Ontario Water Resources Com- mission Ontario Municipal Board Man.:—Dept. of Public Utilities Sask.:—Government Finance Office Saskatchewan Government Tele- phones Saskatchewan Power Corporation Alta.:—Board of Public Utilities Commissioners</p>
<p>Dept. of Public Works Information Services Dept. of Labour Industrial Relations Branch (fair wages) Dept. of Transport Marine and Air Services St. Lawrence Seaway Authority</p>	<div>PUBLIC WORKS</div>	<p>All Provinces:—Depts. of Public Works Additional:—Ont.:—The Hydro- Electric Power Commission of Ontario Ontario Water Resources Com- mission</p>
<p>Canadian Broadcasting Corporation Board of Broadcast Governors (reg- ulations for operation of radio and TV stations and networks both public and private) Canadian Overseas Telecommuni- cation Corporation Dept. of Transport Telecommunications Branch (all matters affecting licences and facilities) National Research Council Radio and Electrical Engineering Division (radio science and its application to industry)</p>	<div>RADIO</div>	<p>Ont.:—Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRT- FM Sask.:—Dept. of Natural Resources, Communications Division Alta.:—Radio CKUA, Edmonton, operated by Dept. of Telephones</p>
	<div>RAILWAYS</div> <p>See "Transportation"</p>	
<p>Dept. of Northern Affairs and National Resources National Parks Branch Northern Administration Branch (Yukon and N.W.T.) Dept. of National Health and Welfare National Gallery of Canada National Film Board</p>	<div>RECREATION</div> <p>See also "Health"</p>	<p>Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Que., Ont.:— Depts. of Education Man.:—Dept. of Industry and Com- merce, Travel and Publicity Branch Sask.:—Dept. of Industry and In- formation, Travel Bureau Dept. of Education Alta.:—Dept. of Provincial Secre- tary, Recreation and Cultural Development Branch B.C.:—Dept. of Recreation and Conservation</p>

Sources for Federal Data

Dept. of Veterans Affairs (veterans)
 Dept. of Citizenship and Immigration
 Information Division (Indians)
 Dept. of Justice,
 National Parole Board
 Dept. of Labour
 Civilian Rehabilitation Branch
 Dept. of National Health and
 Welfare
 Dept. of Northern Affairs and
 National Resources
 Northern Administration Branch
 (Eskimos)
 National Film Board

Canada Council (humanities and
 social sciences)

Dept. of Northern Affairs and
 National Resources
 Water Resources Branch (for
 Yukon and N.W.T. and federal
 interests in the provinces)
 Dept. of Fisheries
 Conservation and Development
 Service
 Fisheries Research Board
 Northern Canada Power Commission
 Queen's Printer
 (Organization for Economic Co-
 operation and Development)

Subject

REHABILITATION
 (of persons)

RESEARCH
 See also "Economic
 and Social
 Research",
 "Scientific
 Research"
 and "Atomic
 Energy"

RESOURCE
 DEVELOPMENT

Sources for Provincial Data

Nfld.:—Dept. of Health, Provincial
 Co-ordinator of Rehabilitation
 P.E.I.:—Dept. of Welfare and Labour
 N.S.:—Dept. of Public Health,
 Provincial Rehabilitation Co-
 ordinator
 N.B.:—Dept. of Health, Provincial
 Co-ordinator of Rehabilitation
 Que.:—Dept. of Family and Social
 Welfare
 Dept. of Youth
 Dept. of Labour
 Ont.:—Workmen's Compensation
 Board
 Dept. of Health, Rehabilitation
 Division and Alcoholism and
 Drug Addiction Research Founda-
 tion of Ontario
 Dept. of Reform Institutions
 Man.:—Dept. of Health, Provincial
 Co-ordinator of Rehabilitation
 Services
 Sask.:—Dept. of Social Welfare
 and Rehabilitation, Provincial
 Co-ordinator of Rehabilitation
 of Disabled Persons
 Alta.:—Dept. of Public Welfare
 (rehabilitation of Metis)
 B.C.:—Dept. of Health Services and
 Hospital Insurance, Rehabilita-
 tion Co-ordinator

Nfld.:—Dept. of Economic De-
 velopment
 P.E.I.:—Dept. of Industry and
 Natural Resources
 N.S.:—Dept. of Municipal Affairs
 Dept. of Trade and Industry
 N.B.:—Depts. of Finance and In-
 dustry and Development
 Que.:—Depts. of Lands and Forests,
 Labour, Roads, Family, and
 Social Welfare, Youth, Natural
 Resources, and Industry and
 Commerce
 Ont.:—Dept. of Economics and
 Development, Special Research
 and Surveys Branch
 Dept. of Energy Resources
 Dept. of Lands and Forests
 Ontario - St. Lawrence Develop-
 ment Commission
 Dept. of Municipal Affairs, Com-
 munity Planning Branch
 Ontario Northland Transportation
 Commission, North Bay
 Man.:—Dept. of Mines and Natural
 Resources
 Dept. of Industry and Commerce
 Manitoba Development Authority
 Sask.:—Dept. of Industry and In-
 formation, Industrial Develop-
 ment Office
 Alta.:—Dept. of Industry and De-
 velopment
 B.C.:—Dept. of Industrial Develop-
 ment, Trade, and Commerce,
 Bureau of Economics and Sta-
 tistics

Sources for Federal Data	Subject	Sources for Provincial Data
<p>National Research Council Laboratory Divisions (applied biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering) Regional Laboratories at Saskatoon, Sask., and Halifax, N.S. Medical Research Council (fellowships, associateships and grants-in-aid) Canadian Patents and Development Limited (licences available on patents derived from government research, etc.) Atomic Energy of Canada Limited, Chalk River, Ont. Dept. of Agriculture Research Branch (basic and applied research on all aspects of agriculture) Dept. of Forestry Forest Research Branch Forest Products Research Branch Forest Entomology and Pathology Branch Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Dominion Observatories Geographical Branch Marine Sciences Branch Dept. of National Defence Defence Research Board Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources National Museum of Canada National Parks Branch (wildlife) Northern Co-ordination and Research Dept. of Transport (aviation, radio, meteorology, navigation) Dept. of Veterans Affairs (medical research) Fisheries Research Board National Gallery of Canada Queen's Printer (International Atomic Energy Agency)</p>	<p>SCIENTIFIC RESEARCH See also "Atomic Energy"</p>	<p>Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Nova Scotia Research Foundation N.B.:—Dept. of Finance Dept. of Industry and Development, Research and Development Division Que.:—Dept. of Agriculture and Colonization Dept. of Natural Resources Dept. of Roads Ont.:—Ontario Research Foundation Dept. of Agriculture Dept. of Lands and Forests Alcoholism and Drug Addiction Research Foundation of Ontario Hydro-Electric Power Commission of Ontario Man.:—Various Depts., such as Health and Mines and Natural Resources Manitoba Research Council Sask.:—Saskatchewan Research Council Alta.:—Alberta Research Council B.C.:—Dept. of Industrial Development, Trade, and Commerce, B.C. Research Council</p>

SENATE
See "Parliament"

**SMALL LOANS
AND
MONEY-LENDERS**
See "Banking"

Sources for Federal Data

Subject

Sources for Provincial Data

SOCIAL
SECURITY

See

"Family
Allowances"

"Blindness
Allowances"

"Old Age
Assistance"

"Old Age
Security"

"Disabled Persons
Allowances"

"Workmen's
Compensation"

"Labour"

"Unemployment"

"Veterans Affairs"

"Economic and
Social Research"

SOCIAL WELFARE

See "Welfare"

Dept. of Trade and Commerce
Standards Branch (for inquiries
on electricity and gas inspection,
weights and measures, precious
metals marking, commodity
standards and national trade
mark matters)

Canadian Government Specifications
Board (specifications for pur-
chasing)

Canadian Standards Association
Central Mortgage and Housing
Corporation (apartment building
standards; NHA financed)

Dept. of National Defence

Dept. of Transport (standards in
radio frequencies, standards in
steamship inspection)

National Research Council

Applied Physics Division (funda-
mental physical and electrical
standards)

Division of Building Research,
Specifications Section

STANDARDS
AND
SPECIFICATIONS

See also

"Food and
Drugs"

Crown Assets Disposal Corporation

SURPLUS
GOVERNMENT
PROPERTY

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Revenue Taxation Division (income tax and estate tax statistics and information) Customs and Excise Division (customs duty, excise duty, excise tax and sales tax) Dept. of Finance (taxation policy, tariff policy, Budget papers and statistics)	TAXATION	Nfld., Que.:—Depts. of Finance P.E.I.:—Provincial Treasurer N.S.:—Dept. of Finance and Economics N.B.:—Dept. of Finance Dept. of Industry and Development Ont.:—Treasury Dept. Man., Sask.:—Provincial Treasury Depts. Alta.:—Provincial Treasurer's Dept. Dept. of Provincial Secretary Dept. of Municipal Affairs B.C.:—Dept. of Finance, Surveyor of Taxes
	TELEGRAPHS AND TELEPHONES See "Communications"	
Board of Broadcast Governors Canadian Broadcasting Corporation Dept. of Transport Telecommunications Branch National Research Council National Film Board	TELEVISION See also "Radio"	
Dept. of Mines and Technical Surveys Topographical Survey Division National Research Council Applied Physics Division (photogrammetric research)	TOPOGRAPHY	Nfld.:—Dept. of Mines, Agriculture, and Resources N.S.:—Dept. of Mines Nova Scotia Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Industry and Commerce, Drafting Division Dept. of Natural Resources Ont.:—Dept. of Lands and Forests, Lands and Surveys Branch Man.:—Dept. of Mines and Natural Resources, Surveys Branch Sask.:—Dept. of Natural Resources Alta., B.C.:—Depts. of Lands and Forests
Dept. of Trade and Commerce Canadian Government Travel Bureau Canadian Government Exhibition Commission (displays) Dept. of Northern Affairs and National Resources Northwest Territories Tourist Office, Whitehorse National Parks Branch Dept. of Citizenship and Immigration Information Division National Gallery of Canada National Film Board Dominion Bureau of Statistics	TOURIST TRADE	Nfld.:—Tourist Development Board P.E.I.:—Dept. of Provincial Secretary, Tourist and Information Branch N.S.:—Dept. of Trade and Industry, Travel Bureau N.B.:—New Brunswick Travel Bureau Que.:—Dept. of Tourism, Game and Fish Ont.:—Dept. of Travel and Publicity Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information, Travel Bureau Alta.:—Dept. of Industry and Development, Alberta Travel Bureau B.C.:—Dept. of Recreation and Conservation, Travel Branch

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Trade and Commerce Agriculture and Fisheries Branch Canadian Government Exhibition Commission Commodities Branch (for exports, imports, transportation, etc.) Export Credits Insurance Corporation International Trade Relations Branch Standards Branch (weights and measures) Trade Commissioner Service Trade Fairs and Missions Branch Trade Publicity Branch Trade Services Branch Dept. of Finance Economic Affairs Division (tariff policy) Dept. of Forestry Economics Division Dept. of Secretary of State Companies and Corporations Branch Queen's Printer (Organization for Economic Co-operation and Development, GATT) National Film Board Dominion Bureau of Statistics</p>	<p>TRADE</p>	<p>For incorporation of companies under provincial law, address Provincial Secretaries except B.C., where Attorney General's Department is the authority. Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry N.B., Alta.:—Depts. of Industry and Development Que., Man.:—Depts. of Industry and Commerce Ont.:—Dept. of Economics and Development, Trade and Industry Branch and Special Research and Surveys Branch Sask.:—Dept. of Industry and Information, Trade and Business Information Services B.C.:—Dept. of Industrial Development, Trade, and Commerce</p>
<p>Dept. of the Secretary of State Bureau for Translations National Research Council National Science Library (information re location of completed scientific translations in Canada, other countries of the Commonwealth, and the United States)</p>	<p>TRANSLATIONS</p>	<p>Que.:—Legislative Assembly Bureau for Translations</p>
<p>Dept. of Transport Information Services Air Transport Board (regulation of commercial air services) Board of Transport Commissioners (regulations re railways; highway crossings; rates of railways, express companies and certain inland water carriers; rates re communications, international bridges and tunnels; licences to certain inland carriers) Canadian Maritime Commission Canadian National Railways Dept. of Forestry (access roads) Dept. of Northern Affairs and National Resources (Roads to Resources and Territorial Development Roads) National Parks Branch (highways in National Parks) Dept. of Public Works (Trans-Canada Highway, roads and bridges in the North and in National Parks and international and interprovincial bridges) Information Services Dept. of Trade and Commerce Trade Services Branch National Harbours Board Northern Transportation Company Limited (Crown) St. Lawrence Seaway Authority Trans-Canada Air Lines National Film Board Dominion Bureau of Statistics</p>	<p>TRANSPORTATION</p>	<p>Nfld., N.S.:—Depts. of Highways P.E.I.:—Dept. of Industry and Natural Resources N.B.:—Dept. of Public Works, Highways Branch Que.:—Dept. of Transportation and Communications Dept. of Roads Ont.:—Dept. of Transport Dept. of Highways Dept. of Economics and Development, Special Research and Surveys Branch Ontario Northland Transportation Commission, North Bay Man.:—Dept. of Public Works, Highways Branch Manitoba Transportation Commission Dept. of Public Utilities Dept. of Industry and Commerce Sask.:—Dept. of Highways and Transportation Saskatchewan Transportation Company Alta.:—Dept. of Highways Highway Traffic Board Alberta Freight Bureau B.C.:—Dept. of Commercial Transport Public Utility Commission Dept. of Highways Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) National Parks Branch Dept. of Citizenship and Immigration Information Division (Indians) Dominion Bureau of Statistics	TRAPPING <i>See also</i> "Fur Farming"	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Tourism, Game and Fish Man.:—Dept. of Mines and Natural Resources, Game Branch Sask.:—Dept. of Natural Resources, Fur Marketing Service B.C.:—Dept. of Recreation and Conservation
Dept. of Labour Economics and Research Branch Unemployment Insurance Commission Dominion Bureau of Statistics	UNEMPLOYMENT	Nfld., N.S., Que., Man., Sask., Alta.:—Depts. of Labour N.B.:—Office of the Economic Advisor Ont.:—Dept. of Economics and Development, Economics Branch Dept. of Public Welfare B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Labour
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Labour (winter works program, vocational training)	UNEMPLOYMENT ASSISTANCE	Nfld., P.E.I., N.S., Man., Sask.:—Depts. of Public Welfare N.B.:—Dept. of Youth and Welfare Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Public Welfare, Director of General Welfare Assistance B.C.:—Dept. of Social Welfare
Central Mortgage and Housing Corporation	URBAN REDEVELOPMENT	Ont.:—Dept. of Economics and Development, Housing Branch Man.:—Dept. of Municipal Affairs, Municipal Affairs Branch Manitoba Housing Commission B.C.:—Dept. of Finance, Housing Commissioner
Dept. of Veterans Affairs (general information, rehabilitation, welfare, veterans allowances, training, treatment, land settlement, gratuities, re-establishment credit, education of children of war dead, insurance, records of service, war graves and medals) Canadian Pension Commission Dept. of Citizenship and Immigration Indian Affairs Branch (Indian veterans) Dept. of Finance (veterans business and professional loans) Dept. of Labour (reinstatement, vocational training) War Veterans Allowance Board	VETERANS AFFAIRS	P.E.I.:—Provincial Secretary N.S.:—Dept. of Public Welfare N.B.:—Dept. of Youth and Welfare Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Public Welfare, Soldiers Aid Commission Sask.:—Dept. of Social Welfare, Rehabilitation Division B.C.:—Dept. of Provincial Secretary
Dominion Bureau of Statistics Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Public Archives (early census records)	VITAL STATISTICS	Nfld., N.B., Que.:—Depts. of Health P.E.I.:—Dept. of Health, Director of Vital Statistics N.S.:—Dept. of Public Health, Registrar General Ont.:—Dept. of Provincial Secretary and Citizenship, Office of the Registrar-General Man.:—Dept. of Welfare, Vital Statistics Division Sask.:—Dept. of Public Health, Vital Statistics Branch Alta.:—Dept. of Public Health, Director of Vital Statistics B.C.:—Dept. of Health Services and Hospital Insurance, Vital Statistics Division

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Labour
Industrial Relations Branch (fair wages)
Economics and Research Branch
Legislation Branch
National Research Council
Division of Administration and Awards (recruitment and salary levels of scientific and technical personnel)
Dominion Bureau of Statistics

**WAGES
AND
WORKING
CONDITIONS**

(All Provinces:—Depts. of Labour
Additional:—Ont.:—Dept. of Economics and Development, Economics Branch
Man.:—Dept. of Industry and Commerce, Business Research Branch
Alta.:—Dept. of Industry and Development
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Northern Affairs and National Resources
Water Resources Branch (Yukon and N.W.T. and federal interests in provinces)
Dept. of Agriculture
Prairie Farm Rehabilitation Administration
Dept. of Fisheries
Conservation and Development Service
Dept. of Mines and Technical Surveys
Mines Branch (industrial waters)
Geological Survey of Canada (ground-water studies)
National Film Board

**WATER
RESOURCES**

Nfld.:—Dept. of Mines, Agriculture, and Resources
N.S.:—Nova Scotia Power Commission
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Natural Resources
Ont.:—Ontario Water Resources Commission
Dept. of Lands and Forests
Man.:—Dept. of Agriculture and Conservation, Water Control Branch
Sask., Alta.:—Depts. of Agriculture
B.C.:—Dept. of Lands, Forests and Water Resources

Dept. of National Health and Welfare
Dept. of Citizenship and Immigration
Indian Affairs Branch
Dept. of Northern Affairs and National Resources
Northern Administration Branch (for Eskimos)
National Advisory Committee on the Rehabilitation of Disabled Persons
Northwest Territories Council, Ottawa
Unemployment Insurance Commission
Yukon Territorial Council, Whitehorse
National Film Board
Dominion Bureau of Statistics

**WELFARE
For Welfare of
Veterans see
"Veterans Affairs"**

Nfld., N.S., Ont., Alta.:—Depts. of Public Welfare
P.E.I.:—Dept. of Welfare and Labour
N.B.:—Dept. of Health
Que.:—Dept. of Family and Social Welfare
Dept. of Youth
Man.:—Dept. of Welfare
Sask.:—Dept. of Social Welfare and Rehabilitation
B.C.:—Dept. of Social Welfare

Dept. of Northern Affairs and National Resources
Canadian Wildlife Service
National Museum of Canada
Commissioner of Yukon Territory, Whitehorse
Dept. of Fisheries
Information and Consumer Service
National Film Board

WILDLIFE

Nfld.:—Dept. of Mines, Agriculture, and Resources
P.E.I.:—Dept. of Industry and Natural Resources
N.S., Ont., Alta.:—Depts. of Lands and Forests
N.B.:—Dept. of Lands and Mines
Que.:—Dept. of Tourism, Game and Fish
Man.:—Dept. of Mines and Natural Resources
Sask.:—Dept. of Natural Resources, Wildlife Branch
B.C.:—Dept. of Recreation and Conservation

Dept. of Labour
Accident Prevention and Compensation Branch
Merchant Seamen Compensation Board
Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)

**WORKMEN'S
COMPENSATION**

(Provincial Workmen's Compensation Boards at:—
Nfld.:—St. John's
P.E.I.:—Charlottetown
N.S.:—Halifax; *N.B.:*—Saint John
Ont.:—Toronto; *Man.:*—Winnipeg
Sask.:—Regina; *Alta.:*—Edmonton
B.C.:—Vancouver
Que.:—Workmen's Compensation Commission

PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

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PART III.—REGISTER OF OFFICIAL APPOINTMENTS*

The following list includes official appointments for the period Sept. 1, 1962 to Nov. 15, 1963, continuing the list published in the 1962 Year Book at pp. 1176-1181. Appointments to the Governor General's staff, judicial appointments other than those to the Supreme Court of Canada, and appointments of limited or local importance are not included.

Queen's Privy Council for Canada.—1962. *Oct. 15*, Mark Robert Drouin, Sillery, Que.; and Roland Michener, Toronto, Ont.: to be members. *Dec. 21*, Rt. Hon. John George Diefenbaker, Prime Minister of Canada: to be President. **1963.** *Feb. 12*, Marcel-Joseph-Aimé Lambert, Edmonton, Alta.: to be a member. *Feb. 20*, Major-General Georges P. Vanier, Governor General of Canada: to be a member. *Mar. 18*, J.-H. Théogène Ricard, St. Hyacinthe, Que.; Frank Charles McGee, Don Mills, Ont.; and Martial Asselin, La Malbaie, Que.: to be members. *Apr. 22*, Walter Lockhart Gordon, Toronto, Ont.; Mitchell Sharp, Toronto, Ont.; Azellus Denis, Montreal, Que.; George James McIlraith, Ottawa, Ont.; William Moore Benidickson, Kenora, Ont.; Arthur Laing, Vancouver, B.C.; John Richard Garland, North Bay, Ont.; Lucien Cardin, Sorel, Que.; Allan Joseph MacEachen, Inverness, N.S.; Jean-Paul Deschatelets, Montreal, Que.; Hédard Robichaud, Caraquet, N.B.; J. Watson MacNaught, Summerside, P.E.I.; Roger Teillet, St. Boniface, Man.; Miss Judy LaMarsh, Niagara Falls, Ont.; Charles Mills Drury, Westmount, Que.; Guy Favreau, Montreal, Que.; John Robert Nicholson, Vancouver, B.C.; Harry Hays, Calgary, Alta.; René Tremblay, Quebec, Que.; and Maurice Lamontagne, Montreal, Que.: to be members, Maurice Lamontagne to be also President. *Apr. 26*, Hon. Robert Taschereau, Chief Justice of Canada: to be a member. *May 23*, Robert Gordon Robertson, Deputy Minister of Northern Affairs and National Resources: to be Clerk of the Queen's Privy Council for Canada.

Lieutenant-Governors.—1963. *Jan. 21*, Hon. William Earl Rowe, Newton Robinson, Ont.: to be Lieutenant-Governor of the Province of Ontario from Mar. 1, 1963. *Feb. 5*, Robert L. Hanbidge, Kerrobert, Sask.: to be Lieutenant-Governor of the Province of Saskatchewan from Mar. 1, 1963. Fabian O'Dea, St. John's, Nfld.: to be Lieutenant-Governor of the Province of Newfoundland from Mar. 1, 1963. Henry Poole MacKeen, Halifax, N.S.: to be Lieutenant-Governor of the Province of Nova Scotia from Mar. 1, 1963. *June 21*, Lt. Col. Willibald Joseph MacDonald, Charlottetown, P.E.I.: to be Lieutenant-Governor of the Province of Prince Edward Island.

Cabinet Appointments.—1963. *Feb. 12*, Hon. Marcel-Joseph-Aimé Lambert: to be Minister of Veterans Affairs. Hon. Malcolm Wallace McCutcheon: to be Minister of Trade and Commerce. Hon. Gordon Churchill: to be Minister of National Defence. *Mar. 18*, J.-H. Théogène Ricard and Hon. Frank Charles McGee: to be members of the Administration. Hon. Martial Asselin: to be Minister of Forestry. *Apr. 22*, Hon. Lionel Chevrier: to be Minister of Justice and Attorney General. Hon. Paul Joseph James Martin: to be Secretary of State for External Affairs. Hon. William Ross Macdonald: to be a member of the Administration. Hon. John Whitney Pickersgill: to be Secretary of State of Canada. Hon. Paul Theodore Hellyer: to be Minister of National Defence. Hon. J. Watson MacNaught: to be Solicitor General of Canada. Hon. Walter Lockhart Gordon: to be Minister of Finance and Receiver General. Hon. Mitchell Sharp: to be Minister of Trade and Commerce. Hon. Azellus Denis: to be Postmaster General. Hon. George James McIlraith: to be Minister of Transport. Hon. William Moore Benidickson: to be Minister of Mines and Technical Surveys. Hon. Arthur Laing: to be Minister of Northern Affairs and National Resources. Hon. John Richard Garland: to be Minister of National Revenue. Hon. Lucien Cardin: to be Associate Minister of National Defence. Hon. Allan Joseph MacEachen: to be Minister of Labour. Hon. Jean-Paul Deschatelets: to be Minister of Public Works. Hon. Hédard Robichaud: to be Minister of Fisheries.

* All academic and honorary degrees and military honours omitted.

Hon. J. Watson MacNaught: to be a member of the Administration. Hon. Roger Teillet: to be Minister of Veterans Affairs. Hon. Judy LaMarsh: to be Minister of National Health and Welfare. Hon. Charles Mills Drury: to be Minister of Defence Production. Hon. Guy Favreau: to be Minister of Citizenship and Immigration. Hon. John Robert Nicholson: to be Minister of Forestry. Hon. Harry Hays: to be Minister of Agriculture. Hon. René Tremblay: to be a member of the Administration. *May 23*, Hon. Robert Gordon Robertson: to be Secretary to the Cabinet, from July 1, 1963. *July 25*, Hon. Charles Mills Drury: to be Minister of Industry. *Aug. 14*, Hon. Maurice Lamontagne: to act as the Minister for the purposes of the Economic Council of Canada Act.

Senate Appointments.—1962. *Sept. 24*, Hon. George Stanley White, a member of the Senate: to be Speaker of the Senate. M. Grattan O'Leary, Ottawa, Ont.: to be a Senator for the Province of Ontario. Edgar Fournier, Iroquois, N.B.: to be a Senator for the Province of New Brunswick. Allister Grosart, Ottawa, Ont.: to be a Senator for the Province of Ontario. *Sept. 25*, Frank Welch, Wolfville, N.S.: to be a Senator for the Province of Nova Scotia. Clement O'Leary, Antigonish, N.S.: to be a Senator for the Province of Nova Scotia. *Nov. 13*, Jacques Flynn, Quebec, Que.: to be a Senator for the Province of Quebec. *Nov. 29*, John Alexander Robertson, Kenora, Ont.: to be a Senator for the Province of Ontario. **1963.** *Feb. 4*, Paul Yuzyk, Winnipeg, Man.: to be a Senator for the Province of Manitoba. Hon. David James Walker, Toronto, Ont.: to be a Senator for the Province of Ontario. Rhéal Bélisle, Chelmsford, Ont.: to be a Senator for the Province of Ontario. *Feb. 5*, Orville Howard Phillips, Alberton, P.E.I.: to be a Senator for the Province of Prince Edward Island. *Apr. 27*, Maurice Bourget, Lévis, Que.: to be a Senator for the Province of Quebec, and to be Speaker of the Senate. *June 11*, Duncan Kenneth MacTavish, Rockcliffe Park, Ont.: to be a Senator for the Province of Ontario. Louis-P. Gélinas, Montreal, Que.: to be a Senator for the Province of Quebec. *July 6*, Romuald Bourque, Outremont, Que.: to be a Senator for the Province of Quebec.

Supreme Court of Canada.—1962. *Nov. 23*, Hon. Emmett Matthew Hall, Chief Justice of Saskatchewan: to be a Puisne Judge of the Supreme Court of Canada. **1963.** *Apr. 22*, Hon. Robert Taschereau, a Puisne Judge of the Supreme Court of Canada: to be Chief Justice of Canada. *May 30*, Hon. Wishart Flett Spence, a Judge of the Supreme Court of Ontario and a member of the High Court of Justice for Ontario: to be a Puisne Judge of the Supreme Court of Canada.

Deputy Ministers.—1962. *Oct. 30*, S. J. Chagnon, Assistant Deputy Minister of Agriculture: to be Associate Deputy Minister of Agriculture. **1963.** *Feb. 4*, W. E. van Steenburgh, Director General of Scientific Services, Department of Mines and Technical Surveys: to be Deputy Minister of Mines and Technical Surveys. *Feb. 26*, Alfred Walker Hollinshead Needler, Nanaimo, B.C.: to be Deputy Minister of Fisheries. *May 23*, Ernest A. Côté, Assistant Deputy Minister of Northern Affairs and National Resources: to be Deputy Minister from July 1, 1963. Robert Broughton Bryce, Clerk of the Queen's Privy Council for Canada and Secretary to the Cabinet: to be Deputy Minister of Finance and Receiver General pursuant to Section 10 of the Financial Administration Act, from July 1, 1963. *July 25*, David Aaron Golden, Ottawa, Ont.: to be Deputy Minister of Industry. *Sept. 19*, Lucien Lalonde, Deputy Minister of Veterans Affairs: to be Deputy Minister of Public Works. Paul Pelletier, a member of the Civil Service Commission: to be Deputy Minister of Veterans Affairs. *Nov. 4*, Claude M. Isbister, Assistant Deputy Minister of Finance: to be Deputy Minister of Citizenship and Immigration from Nov. 4, 1963.

Diplomatic Appointments.—1962. The following diplomatic appointments were announced during the year. F. M. Tovell: to be Canadian Ambassador to Peru and Bolivia. John Alexander McCordick: to be Canadian Ambassador to Czechoslovakia. Gordon Edwin Cox: to be Canadian Commissioner, International Supervisory Commission for Viet Nam, effective from the date of his arrival in Saigon, Indochina. William Frederick

Bull: to be Canadian Ambassador to The Netherlands. Bruce MacGillivray Williams: to be Canadian Ambassador to Turkey. Donald Macalister Cornett: to be High Commissioner for Canada to Ghana. Norman Frederick Henderson Berlis, High Commissioner for Canada to Tanganyika: to be also High Commissioner for Canada to Uganda. Paul Augustus Bridle: to be Canadian Commissioner, International Supervisory Commission for Laos. Richard Plant Bower: to be Canadian Ambassador to Japan. Thomas Paul Malone: to be Canadian Ambassador to Iran. Eric Herbert Gilmour: to be High Commissioner for Canada to Trinidad and Tobago. Donald Macalister Cornett, High Commissioner for Canada to Ghana: to be concurrently Ambassador to the Ivory Coast, Upper Volta, Guinea and Togo. George Bernard Summers: to be Canadian Ambassador to Chile. Kenneth Joseph Burbridge: to be High Commissioner for Canada to New Zealand. Léon Mayrand: to be Canadian Ambassador to Argentina. Graham Campbell McInnes: to be High Commissioner for Canada to Jamaica. Léon Mayrand, Canadian Ambassador to Argentina: to be concurrently Ambassador to Uruguay and Paraguay. **1963.** The following diplomatic appointments were announced during the year (to Nov. 15). John Arnold Irwin: to be Canadian Ambassador to Poland. J. Antonio Barrette: to be Canadian Ambassador to Greece. Joseph-Charles-Léonard-Yvon Beaulne, Canadian Ambassador to Venezuela: to be concurrently Ambassador to the Dominican Republic. Robert A. D. Ford, to be Canadian Ambassador to the Union of Soviet Socialist Republics. Llewellyn Aikins Douglas Stephens: to be High Commissioner for Canada to Pakistan. Jean-Louis Delisle, Canadian Ambassador to Costa Rica with concurrent accreditation to Nicaragua, Honduras and Panama: to be Canadian Ambassador to El Salvador. Paul-André Beaulieu: to be Canadian Ambassador to Brazil. Joseph-Marc-Antoine-Jean Chapdelaine: to be Canadian Ambassador to the United Arab Republic and to the Sudan.

Government Appointments to Miscellaneous Boards, Commissions, etc.

Agricultural Stabilization Board.—1963. *Jan. 3*, Sydney B. Williams, S. J. Chagnon and A. H. Turner, Ottawa, Ont.: to be members.—Mr. Williams to be Chairman, *vice* L. W. Pearsall, resigned, and Mr. Chagnon to be Vice-Chairman.

Air Transport Board.—1963. *Oct. 10*, F. T. Wood, Montreal, Que.: to be a member and Chairman for ten years, *vice* Paul Davoud, resigned. *Oct. 11*, J. L. Gerald Morisset, a member: to be Vice-Chairman.

Area Development Agency.—1963. *Oct. 31*, W. J. Lavigne, Montreal, Que.: to be Commissioner for Area Development from Nov. 15, 1963. J. A. Teeter, Ottawa, Ont.: to be Deputy Commissioner from Nov. 15, 1963.

Atlantic Development Board.—1963. *Jan. 24*, J. Michael S. Wardell, Fredericton, N.B. (five years); Frank H. Sobey, Stellarton, N.S. (five years*); Melvin McQuaid, Souris, P.E.I. (four years*); Fred Ayre, St. John's, Nfld. (four years*); and Donat Lalande, Moncton, N.B. (three years*): to be members for the term set following the name—J. Michael S. Wardell to be Chairman. *Feb. 12*, Ernest P. Weeks, Ottawa, Ont.: to be executive Director from Mar 1, 1963. *Aug. 2*, Robert Cheyne Eddy, Bathurst, N.B.; Ian Malcolm MacKeigan, Halifax, N.S.; and Albert Martin, Corner Brook, Nfld.: to be members for a term ending Jan. 24, 1966; and Carl Frederick Burke, Charlottetown, P.E.I.; Maxwell Burry, Glovertown, Nfld.; and Stephen A. Dolhanty, Florence, N.S.: to be members for a term ending Jan. 24, 1965—Ian Malcolm MacKeigan to be Chairman. *Sept. 16*, Armand Cormier, Moncton, N.B.: to be a member, *vice* Donat Lalande.

Board of Broadcast Governors.—1962. *Oct. 18*, Henry Edward Campbell, Ottawa, Ont.; and Claude Gagnon, Quebec, Que.: to be part-time members for five years. *Nov. 29*, Charles R. Chambers, Toronto, Ont.: to be a part-time member for five years. **1963.**

* By amendment dated Aug. 2, 1963, term to expire Jan. 24, 1965.

Aug. 3, John M. Coyne, Ottawa, Ont.: to be a part-time member for five years, *vice* Charles R. Chambers, resigned. *Sept. 13*, Joseph W. Grittani, Etobicoke, Ont.: to be a member for five years, *vice* Edward A. Dunlop.

Board of Grain Commissioners.—1962. *Nov. 27*, Frank Hamilton, Assistant Grain Commissioner, Saskatchewan: to be Chief Commissioner, *vice* George Newton McConnell, deceased. *Dec. 4*, Jack Harley Davidson, District Supervisor, Prairie Farm Assistance Act, Swift Current, Sask.: to be an Assistant Grain Commissioner for Saskatchewan.

Board of Trustees of the Maritime Transportation Unions.—1963. *Oct. 23*, Hon. Victor Leonard Dryer, Vancouver, B.C.: to be Chairman. Hon. René Lippé, Montreal, Que.; and Charles H. Millard, Toronto, Ont.: to be members.

Canada Council.—1963. *Feb. 12*, Marcel Faribault, Outremont, Que.: to be again a member for three years. *July 16*, John William Tranter Spinks, Saskatoon, Sask.: to be a member for a second term of three years. George Edward Hall, London, Ont.: to be a member for a second term of three years. Henry Davies Hicks, Halifax, N.S.; Rev. Jean-Adrien Arsenaault, Charlottetown, P.E.I.; Chalmers Jack Mackenzie, Ottawa, Ont.; James Stuart Keate, Victoria, B.C.; and Miriam Barber Dorrance, Vancouver, B.C.: to be members for three years.

Canadian Broadcasting Corporation.—1962. *Nov. 6*, Roger Séguin, Ottawa, Ont.; and F. L. Jenkins, London, Ont.: to be Directors for three years. **1963.** *July 16*, David McArel MacAuley, Sackville, N.B.: to be a Director for three years. *Sept. 13*, Terence W. L. MacDermot, Lennoxville, Que.: to be a Director for three years, *vice* R. L. Dunsmore.

Canadian Commercial Corporation.—1963. *Mar. 4*, David Beatty Mundy, Assistant Deputy Minister, Department of Defence Production: to be a Director, *vice* Gordon Ward Hunter. *Oct. 3*, Alan Goldworth Bland, President, Defence Construction (1951) Limited: to be a Director, *vice* Richard Golding Johnson, resigned.

Canadian National Railways.—1963. *Oct. 4*, Donald Gordon: to be again President and Chairman for a period of 18 months.

Canadian Pension Commission.—1962. *Sept. 19*, James Anderson Forrester, Saskatoon, Sask.: to be an *ad hoc* member for one year from Oct. 1, 1962. *Oct. 25*, Wilbur T. Nixon, an *ad hoc* member: to be a member for ten years from Nov. 18, 1962. **1963.** *Feb. 21*, C. B. Topp: to be an *ad hoc* member from Mar. 15, 1963 to Dec. 6, 1963. *May 30*, Leslie Alexander Mutch, Ottawa, Ont.: to be a Commissioner and Deputy Chairman from July 6, 1963 to Jan. 13, 1967. *June 27*, William Pendleton Power, Ottawa, Ont.: to be a member for ten years from July 1, 1963. Norman Loris Pickersgill, Ottawa, Ont.: to be an *ad hoc* member for one year from July 1, 1963. *Sept. 12*, James Anderson Forrester: to be an *ad hoc* member for one year from Oct. 1, 1963.

Canadian Wheat Board.—1963. *May 30*, Joseph-René Painchaud, Ottawa, Ont.: to be a Commissioner for ten years from June 17, 1963.

Canadian World Exhibition Corporation.—1963. *Jan. 22*, Paul Bienvenu, Montreal, Que.: to be Commissioner General. Cecil Frank Carsley, Westmount, Que.: to be Deputy Commissioner General. *Feb. 9*, Herb Lank, Montreal, Que.; Lucien Piché, Montreal, Que.; Claude Pratte, Quebec, Que.; Maurice Riel, Montreal, Que.; André Rousseau, St. Jean Port Joli, Que.; Lucien Saulnier, Montreal, Que.; T. N. Beaupré, Vancouver, B.C.; Jean Drapeau, Montreal, Que.; Jean Lanctot, Montreal, Que.; Victor Oland, Halifax, N.S.; Harry Price, Toronto, Ont.; and Fridolin Simard, Montreal, Que.:

to be Directors. *July 24*, Hon. George Hees, Toronto, Ont.: to be a Director, *vice* Harry Price, resigned. *Sept. 6*, Pierre Dupuy: to be Commissioner General, with the rank of Ambassador, *vice* Paul Bienvenu, resigned. *Sept. 19*, Robert F. Shaw, Montreal, Que.: to be Deputy Commissioner General from Oct. 1, 1963, *vice* C. F. Carsley, resigned.

Central Mortgage and Housing Corporation.—1963. *Oct. 10*, Herbert W. Hignett, Ottawa, Ont.: to be Vice-President from Oct. 1, 1963, *vice* P. S. Secord, retired.

Civil Service Commission.—1963. *Feb. 4*, Robertson Gass MacNeill, Ottawa, Ont.: to be a member and Chairman. *Oct. 31*, Jean Boucher, Ottawa, Ont.: to be a member, *vice* Paul Pelletier.

Copyright Appeal Board.—1962. *Nov. 6*, Jean Miquelon, Under Secretary of State and Deputy Registrar General of Canada: to be a member, *vice* A. Alex. Cattanaach, resigned.

Defence Research Board.—1962. *Nov. 6*, Gordon Ward Hunter, Deputy Minister of Defence Production: to be a member for a term expiring Mar. 31, 1965, *vice* David Aaron Golden, resigned. **1963.** *Mar. 9*, Robert James Uffen, London, Ont.; John Ferguson McCreary, Vancouver, B.C.; Cyril Arthur Peachey, Montreal, Que.; and George Sydney Field, Ottawa, Ont.: to be members from Apr. 1, 1963 to Mar. 31, 1966. *Mar. 25*, John Tuzo Wilson, Toronto, Ont.: to be a member for a term expiring Mar. 31, 1966.

Dominion Council of Health.—1962. *Oct. 4*, James Patterson Whyte, Swift Current, Sask.: to be a member for three years, *vice* Rupert D. Ramsay, deceased.

Economic Council of Canada.—1963. *Sept. 12*, John J. Deutsch, Vice-Principal of Queen's University, Kingston, Ont.: to be Chairman for seven years from Oct. 1, 1963. *Oct. 3*, Joseph-Louis-Eugène Couillard, Ambassador to Norway and Iceland: to be a Director for seven years from Nov. 15, 1963. Arthur J. R. Smith, Director of Research, The Canadian-American Committee, Montreal, Que.: to be a Director for seven years from Oct. 3, 1963.

Farm Credit Corporation.—1963. *Feb. 12*, George Owen, Vice Chairman: to be Chairman. *Feb. 21*, George Owen, A. Sinclair Abell, Lucien Lalonde and Alexander T. Davidson: to be members for one year from Apr. 5, 1963; George Owen to be Chairman.

Great Lakes Fishery Commission.—1962. *Aug. 22*, John Richardson Dymond, Toronto, Ont.: to be a Commissioner for Canada for a further two years from Sept. 1, 1962. **1963.** Arthur Owen Blackhurst, Port Dover, Ont.: to be again a Commissioner for Canada for a further period ending Dec. 1, 1965.

Historic Sites and Monuments Board of Canada.—1963. *May 30*, Charles Bruce Fergusson, Halifax, N.S., a member: to be Chairman from May 20, 1963 to Apr. 14, 1965. Margaret Anchoretta Ormsby, Victoria, B.C.: to be again a member for five years. *Oct. 3*, Donald Grant Creighton, Toronto, Ont.: to be a member for five years from Oct. 10, 1963.

Immigration Appeal Board.—1962. *Sept. 4*, Douglas Jung, Vancouver, B.C.: to be a member.

International Civil Aviation Organization.—1963. *Sept. 11*, R. Duder: to be Canadian Representative from Jan. 1, 1964, *vice* J. R. K. Main.

International Commission for the Northwest Atlantic Fisheries.—1963. *Apr. 27*, Wilson C. MacKenzie, Director, Economics Service, Department of Fisheries,

Ottawa, Ont.: to be a Commissioner, *vice* George R. Clark, deceased. J. Howard Mac Kichan, Halifax, N.S.: to be again a Commissioner for two years from May 28, 1963. May 30, Paul P. Russell, St. John's, Nfld.: to be a Commissioner for two years.

International Joint Commission.—1963. Jan. 8, Donald McGregor Stephens: to be again a member from Jan. 1, 1963 to Dec. 31, 1965. René Dupuis: to be again a member from Feb. 23, 1963 to Feb. 22, 1966.

International Pacific Salmon Fisheries Commission.—1962. Aug. 15, A. J. Whitmore, Burnaby, B.C.: to be a member for a further two years from Aug. 15, 1962. 1963. Apr. 27, Alfred W. H. Needler, Deputy Minister of Fisheries, Ottawa, Ont.: to be a member, *vice* George R. Clark, deceased.

International Whaling Commission.—1963. Apr. 27, William M. Sprules, Special Assistant to the Deputy Minister of Fisheries: to be a member, *vice* George R. Clark, deceased.

Municipal Development and Loan Board.—1963. Aug. 14, R. B. Bryce, Deputy Minister of Finance and Receiver General; Stewart Bates, President, Central Mortgage and Housing Corporation; and Jean Miquelon, Under Secretary of State: to be members—R. B. Bryce to be Chairman. Sept. 4, Kenneth W. Taylor, Government Adviser on University Grants: to be a member and to be Chairman, *vice* R. B. Bryce who remains a member.

National Battlefields Commission.—1963. Feb. 21, John Gordon Ross, Quebec, Que.: to be a member, *vice* R. H. Price. Mar. 18, Félix Hudon, Quebec, Que.: to be Secretary from Apr. 6, 1963, *vice* P. H. Fanning Gosselin. July 30, Jean Leahy, Quebec, Que.: to be a member, *vice* James Y. Murdoch, deceased.

National Capital Commission.—1963. Feb. 4, Anthony Adamson, Toronto, Ont.; J.-E. Bissonnette, Quebec, Que.; Walter Tucker, Grand Falls, Nfld.; A. E. Campbell, Ottawa, Ont.; Louis M. Bloomfield, Montreal, Que.; Frank Martin, Saskatoon, Sask.; Charles H. Hulse, Ottawa, Ont.; and Hans Geggie, Wakefield, Que.: to be members for four years. F. F. Kemp, Richmond, Ont.; J. C. Horwitz, Ottawa, Ont.; Miss S. C. McLellan, Saint John, N.B.; and Richard Parkinson, Kelowna, B.C.: to be members for three years from Feb. 6, 1963—Anthony Adamson to be Vice-Chairman.

National Centennial Administration.—1963. Jan. 24, John Fisher, Ottawa, Ont.: to be Commissioner. Robert Choquette, Montreal, Que.: to be Deputy Commissioner. Ernest Côté, Assistant Deputy Minister of Northern Affairs; John Hodgson, Assistant Secretary to the Cabinet; Hugh Mills, Halifax, N.S.; Paul Desmarais, Montreal, Que.; George Metcalf, Toronto, Ont.; N. A. M. MacKenzie, President, Canadian Centenary Council; J. R. Murray, Winnipeg, Man.; and Mrs. Marianne Linnell, Vancouver, B.C.: to be Directors.

National Film Board.—1963. Sept. 13, George V. Haythorne, Deputy Minister of Labour: to be a member for three years. Oct. 18, Charles S. Band, Toronto, Ont.: to be again a member.

National Gallery of Canada.—1962. Oct. 4, Sidney Culverwell Oland, Halifax, N.S.: to be a member of the Board of Trustees, *vice* W. T. Ross Flemington. 1963. Aug. 14, Mrs. Otto Koerner, Vancouver, B.C.: to be a member of the Board of Trustees, *vice* Lawren Harris, resigned.

National Library Advisory Council.—1963. Feb. 2, Antonio Drolet, Quebec, Que.; Marget Meikleham, Hamilton, Ont.; and Harry W. Ganong, Wolfville, N.S.: to be members.

National Museum of Canada.—1963. *Oct. 8*, Richard G. Glover, Professor of History, University of Manitoba: to be Director of the Human History Branch from Jan. 1, 1964.

National Productivity Council.—1963. *Feb. 21*, Miss A. Speers, Winnipeg, Man.; George V. Haythorne, Ottawa, Ont.; and John Convey, Ottawa, Ont.: to be members for three years from Mar. 1, 1963. LeRoy D. Smithers, Sarnia, Ont.: to be a member for three years *vice* George C. Metcalf. *Mar. 4*, A. R. Gibbons, Ottawa, Ont.: to be a member for three years.

National Research Council.—1963. *Feb. 4*, B. G. Ballard, Vice-President (Scientific): to be President. Léo Marion, Senior Director: to be Vice-President (Scientific). *Mar. 9*, Pierre-R. Gendron, Montreal, Que.; Paul Lorrain, Montreal, Que.; John H. Shipley, Montreal, Que.; Louis-Philippe Bonneau, Quebec, Que.; Roger Gaudry, Montreal, Que.; and Robert J. Uffen, London, Ont.: to be members for three years from Apr. 1, 1963.

National Technical and Vocational Training Advisory Council.—1962. *Nov. 1*, Fraser Fulton, Horace Laverdure, Mrs. Saul Hayes, N. D. Cochrane, W. S. McMurtry, Jean Delorme, B. F. Addy, J. P. Mitchell, Garnet Page and Floyd G. Robinson: to be members for a period expiring Dec. 1, 1963. G. H. Paquette, S. T. Payne, Mrs. F. R. Duminy, W. H. Sands, J. H. McLellan, Maurice Barrière, B. Scott Bateman, W. H. Swift, Grant Hines and S. C. T. Clark: to be alternates for the same period. **1963.** *Mar. 4*, W. F. McMullen, J. MacKenzie, J. A. Ferguson, A. W. Crawford, J. A. Doyle, J. W. McNutt and W. D. Mills: to be members for a period expiring Dec. 1, 1963. R. K. Richan, J. Lyle Boisvert, David Kirk, W. W. Sharpe, F. E. MacDiarmid and George E. MacDonald: to be alternates for the same period.

North Pacific Fisheries Commission.—1963. *Aug. 29*, John M. Buchanan: to be again a member for one year. James Cameron: to be again a member for two years. Carl Giske: to be a member for two years.

Northern Canada Power Commission.—1963. *July 2*, Ernest Adolphe Côté, Deputy Minister of Northern Affairs and National Resources: to be a member and Chairman, *vice* Robert Gordon Robertson, resigned.

Northern Ontario Pipe Line Crown Corporation.—1962. *Nov. 6*, James A. Roberts: to be President, *vice* David A. Golden, resigned.

Northwest Territories Council.—1963. *July 2*, Bent Gestur Sivertz: to be Commissioner from July 12, 1963, *vice* Robert Gordon Robertson, resigned.

Prairie Farm Rehabilitation Committee.—1962. *Oct. 25*, Norman Roebuck, Yorkton, Sask.; Roy Clark, Brandon, Man.; Fred Croy, Stonewall, Man.; Harry Shearer, Elm Creek, Man.; James Cameron, Youngstown, Alta.; Arnold F. Christie, Grande Prairie, Alta.; Desne Holyroyd, Lethbridge, Alta.; Boyd Anderson, Fir Mountain, Sask.; W. H. Hollier, North Battleford, Sask.; Ed. Wright, Eastend, Sask.; and H. J. Collison, Star City, Sask.: to be members—Norman Roebuck to be Chairman.

Restrictive Trade Practices Commission.—1963. *Jan. 24*, Robert Simpson MacLellan, Sydney, N.S.: to be a member and Chairman from Feb. 1, 1963; Walter Donald Ridley Eldon, Ottawa, Ont.: to be a member from Feb. 1, 1963.

Royal Canadian Mounted Police.—1963. *Oct. 18*, George B. McClellan, Deputy Commissioner: to be Commissioner from Nov. 1, 1963, *vice* Clifford Walter Harvison, retired.

Royal Commission on Bilingualism and Biculturalism.—1963. *July 19*, André Laurendeau, Montreal, Que.; Davidson Dunton, Ottawa, Ont.; Rev. Clément Cormier, Moncton, N.B.; Royce Frith, Toronto, Ont.; Jean-Louis Gagnon, Montreal, Que.; Mrs. Stanley Laing, Calgary, Alta.; Jean Marchand, Quebec, Que.; Jaroslav Bohdan Rudnycky, Winnipeg, Man.; Frank Scott, Montreal, Que.; and Paul Wyczynski, Ottawa, Ont.: to be Commissioners under Part I of the Inquiries Act to inquire into and report upon the existing state of bilingualism and biculturalism in Canada—André Laurendeau and Davidson Dunton to be Co-chairmen of the Commission and André Laurendeau to be Chief Executive Officer thereof.

Royal Commission on Pilotage.—1962. *Nov. 1*, Hon. Yves Bernier, a Judge of the Superior Court of Quebec, Quebec, Que.; Robert Knowlton Smith, Waterloo, Ont.; and Harold Alexander Renwick, Vancouver, B.C.: to be Commissioners under Part I of the Inquiries Act, to inquire into and report upon the problems relating to marine pilotage provided in Canada, Hon. Mr. Justice Bernier to be Chairman.

Royal Commission on Taxation.—1962. *Sept. 25*, Kenneth LeM. Carter, J. Harvey Perry, A. Emile Beauvais, Donald G. Grant, Mrs. S. M. Milne, and Charles E. S. Walls: to be Commissioners under Part I of the Inquiries Act, to inquire into and report upon the incidence and effects of taxation imposed by Parliament—Kenneth LeM. Carter to be Chairman.

St. Lawrence Seaway Authority.—1963. *Nov. 7*, Peter Evelyn Reginald Malcolm, Ottawa, Ont.: to be a member for a term of ten years.

The Tariff Board.—1963. *Mar. 11*, Albert D. McPhillips, Victoria, B.C.: to be a member for a term of ten years.

Tax Appeal Board.—1962. *Nov. 1*, Roland St-Onge, Hull, Que.: to be a member for ten years, *vice* Jacques Panneton, deceased. R. W. S. Fordham, a member: to be Assistant Chairman.

Trans-Canada Air Lines.—1962. *Oct. 11*, Hon. Leslie M. Frost, Lindsay, Ont.: to be a Director of Trans-Canada Air Lines from Oct. 1, 1962.

Unemployment Insurance Commission.—1962. *Sept. 6*, C. A. L. Murchison, Ottawa, Ont.: to be again a Commissioner for one year, from Oct. 20, 1962. **1963.** *Sept. 26*, C. A. L. Murchison, Ottawa, Ont.: to be again a Commissioner for one year from Oct. 20, 1963.

War Veterans Allowance Board.—1963. *June 27*, Charles Henry Rennie: to be again a temporary member for one year from Oct. 2, 1963.

PART IV.—FEDERAL LEGISLATION, 1962-63

Legislation passed in the first session of the Twenty-Fifth Parliament, which began on Sept. 27, 1962 and ended on Feb. 6, 1963, is outlined below, together with legislation passed in the elapsed period of the First Session of the Twenty-Sixth Parliament which began on May 16, 1963, recessed from Aug. 3 to Sept. 29 and was still in progress on Nov. 15, 1963, the date of cut-off for this edition of the Year Book.

These classified lists of federal legislation have been compiled from the Statutes. Naturally in summarizing material of this kind it is not always possible to convey the full implication of the legislation. The reader who is interested in any specific Act is therefore referred to the Statutes of Canada in the given volume and chapter.

**Legislation of the First Session of the Twenty-Fifth Parliament,
Sept. 27, 1962 to Feb. 6, 1963**

Subject, Chapter and Date of Assent	Synopsis
11-12 ELIZ. II	
Agriculture—	
7 Nov. 29	<i>An Act to amend the Farm Credit Act</i> revises the Act and Regulations to provide a greater measure of flexibility in meeting the credit needs of Canadian farmers; the capital of the Farm Credit Corporation is raised from \$12,000,000 to \$16,000,000, increasing the amount of funds available for lending.
Finance—	
1 Oct. 25	<i>Appropriation Act No. 6, 1962</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1963.
3 Nov. 29	<i>Appropriation Act No. 7, 1962</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1963.
9 Dec. 20	<i>Appropriation Act No. 8, 1962</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1963.
14 Dec. 20	<i>An Act to amend the Federal-Provincial Fiscal Arrangements Act and the Federal-Provincial Tax-Sharing Arrangements Act</i> increases grants to universities from \$1.50 to \$2 per capita and legalizes certain arrangements made between the Government of Canada and the Government of the Province of Quebec.
Health and Welfare—	
15 Dec. 20	<i>An Act to amend the Food and Drugs Act</i> prescribes the conditions respecting the distribution of samples of drugs by pharmaceutical manufacturers, prohibits the sale of certain designated drugs and defines more clearly the requirements regarding the introduction of new drugs.
16 Dec. 20	<i>An Act to amend the Department of National Health and Welfare Act</i> authorizes the establishment of a National Council of Welfare.
Trade—	
2 Nov. 1	<i>An Act to amend the Export Credits Insurance Act</i> increases from \$200,000,000 to \$400,000,000 the limit of liability of the Export Credits Insurance Corporation under contracts entered into and provides for other administrative changes.
Transportation—	
11 Dec. 20	<i>An Act respecting the Construction of a line of railway in the Province of New Brunswick by Canadian National Railway Company from Nepisiguit Junction on the Bathurst Subdivision of the Canadian National Railway in a southerly and westerly direction for a distance of approximately 15 miles to the property of Brunswick Mining and Smelting Corporation Limited.</i>
Revenue—	
5 Nov. 29	<i>An Act to amend the Estate Tax Act</i> makes a number of technical changes in the Act.
6 Nov. 29	<i>An Act to amend the Excise Tax Act</i> extends the application of the tax on premiums paid to insurers not authorized to transact business in Canada; provides for the payment of sales tax where certain goods imported or purchased exempt from sales tax are later diverted to a taxable use; and adds or deletes certain items to or from the list of exemptions.
8 Nov. 29	<i>An Act to amend the Income Tax Act</i> implements tax proposals introduced in the Budget Speech of Apr. 10, 1962 and provides administrative and technical amendments to the Act.
Miscellaneous—	
4 Nov. 29	<i>An Act to amend An Act to amend the Combines Investigation Act and the Criminal Code</i> exempts from the terms of the Act agreements or arrangements between British Columbia fishermen and British Columbia fish buyers or processors for the years 1959 to 1964, inclusive.
10 Dec. 20	<i>The Atlantic Development Board Act</i> provides for the establishment of the Atlantic Development Board, the duties of which are to inquire into and report upon measures and projects for fostering the economic growth and development of the Atlantic region of Canada.

**Legislation of the First Session of the Twenty-Fifth Parliament,
Sept. 27, 1962 to Feb. 6, 1963—concluded**

Subject, Chapter and Date of Assent	Synopsis
Miscellaneous— concluded	
12 Dec. 20	<i>The Canadian World Exhibition Corporation Act</i> provides for the establishment of the Canadian World Exhibition Corporation, the duties of which are to plan, organize, hold and administer the Canadian Universal and International Exhibition, Montreal, 1967.
13 Dec. 20	<i>An Act to amend the Coal Production Assistance Act</i> makes certain adjustments relating to the rate and terms of repayment of loans made to producers under the Act.
17 Dec. 20	<i>An Act to amend the National Housing Act, 1954</i> extends to Mar. 31, 1965 the deadline for partial forgiveness of municipal indebtedness in connection with sewage treatment project loans.

**Legislation of the First Part of the First Session of the Twenty-Sixth
Parliament which began May 16, 1963**

Subject, Chapter and Date of Assent	Synopsis
12 ELIZ. II	
Government—	
3 July 22	<i>The Department of Industry Act</i> establishes a new Department of Industry presided over by a Minister whose duties, powers and functions shall extend to and include all matters relating to the manufacturing industries in Canada over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada.
5 July 31	<i>An Act to amend the Atlantic Development Board Act</i> increases the Board membership from five to eleven, directs the Board to conduct certain of its functions in consultation with the Economic Council of Canada and establishes an Atlantic Development Fund to finance programs or projects undertaken.
11 Aug. 2	<i>The Economic Council of Canada Act</i> provides for the establishment of an Economic Council of Canada to advise and recommend how Canada can achieve the highest possible levels of employment and efficient production in order that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards.
13 Aug. 2	<i>The Municipal Development and Loan Act</i> provides for the establishment of a Municipal Development and Loan Board which has the function of promoting increased employment in Canada by financial assistance by way of loans to municipalities to enable municipalities to augment or accelerate municipal capital works programs.
14 Aug. 2	<i>An Act to amend the Senate and House of Commons Act and the Members of Parliament Retiring Allowances Act</i> increases the sessional allowances of members of the Senate and House of Commons from \$8,000 to \$12,000, provides for the payment of an additional allowance of \$4,000 to Party Leaders, the Chief Government Whip and the Chief Opposition Whip, and makes other changes in respect of expense and retirement allowances.
Finance—	
1 June 5	<i>Appropriation Act No. 1, 1963</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1964.
2 July 22	<i>Special Appropriation Act, 1963</i> approves certain expenditures authorized for the public service and the application of certain amounts in the accounts for the financial year ended Mar. 31, 1963.
9 Aug. 2	<i>Appropriation Act No. 2, 1963</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1964.
15 Oct. 8	<i>Appropriation Act No. 3, 1963</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1964.
17 Oct. 18	<i>The Maritime Transportation Unions Trustees Act</i> provides for the placing of the Maritime Transportation Unions of Canada under the management and control of trustees.

**Legislation of the First Part of the First Session of the
Twenty-Sixth Parliament which began May 16, 1963—concluded**

Subject, Chapter and Date of Assent	Synopsis
Revenue—	
7 July 31	<i>An Act to amend the Customs Tariff</i> implements the Budget resolution relating to the Customs Tariff.
12 Aug. 2	<i>An Act to amend the Excise Tax Act</i> implements the Budget resolution relating to the Excise Tax Act.
18 Nov. 7	<i>An Act respecting an Order of His Excellency the Governor in Council entitled the Surcharge on Imports Order, and to restore certain rates of Customs duties and tariff benefits expressed to be withdrawn thereby.</i>
Welfare—	
16 Oct. 16	<i>An Act to amend the Old Age Security Act</i> increases the pension paid under the Act from \$65 a month to \$75 a month, effective Oct. 1, 1963, and increases the rate of the Old Age Security tax.
Miscellaneous—	
4 June 5	<i>An Act to amend the Export and Import Permits Act</i> extends the duration of the Act for a further period of three years to July 31, 1966.
6 July 31	<i>An Act to authorize the Construction and Maintenance of a Bridge and Tunnel across the St. Lawrence River at the Boucherville Islands, in the Province of Quebec.</i>
8 July 31	<i>An Act to amend the Judges Act and the Criminal Code</i> increases the salaries of the Chief Justice of Canada, the puisne judges of the Supreme Court of Canada, the President of the Exchequer Court, the puisne judges of the Exchequer Court, the Chief Justice and other judges of the Supreme Court of Ontario, the Chief Justices and other judges of the superior courts of the provinces, the judges of the Territorial Courts of the Yukon Territory and the Northwest Territories and the judges of the county and district courts of the provinces. Provision is also made for the salaries for fourteen additional judges.
10 Aug. 2	<i>The Dissolution and Annulment of Marriages Act</i> authorizes the Senate of Canada to dissolve or annul marriages.

PART V.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; for 1954 in the 1955 Year Book, pp. 1329-1330; for 1955 in the 1956 edition, pp. 1233-1234; for 1956 in the 1957-58 edition, p. 1270; for 1957 in the 1959 edition, p. 1240; for 1958 in the 1960 edition, pp. 1255-1256; for 1959 and 1960 in the 1961 edition, pp. 1241-1245; and for 1961 and January to the end of August 1962 in the 1962 edition, pp. 1184-1188. References regarding changes in federal and provincial legislatures or ministries are not included in the following listing but may be found in Chapter II on Constitution and Government or in Appendix I.

1962

September: *Sept. 1*, 25th anniversary of first scheduled TCA flight celebrated by flight over the original 122-mile route between Vancouver and Seattle, Wash. *Sept. 2*, Sons of Freedom Doukhobors began 400-mile march from Shoreacres to Agassiz, B.C. *Sept. 5*, Announcement of Canada Council grants of \$20,000 to the Humanities Research Council of Canada and the Social Science Research Council of Canada for production of a Canadian history to be completed by 1967. *Sept. 5*, The Canada-U.S.-sponsored World Food Bank initiated by Canada's pledge of \$5,000,000 in cash and commodities to be paid over a three-year period. *Sept. 6*, First of five reports of the Royal Commission on Government Organization released. *Sept. 7*, National Industrial Expansion Conference, sponsored by Department of Trade and Commerce to meet challenge of foreign competition and in-

crease production, opened at Ottawa. *Sept. 10*, Reduction of bank rate from 6 p.c. to 5½ p.c. and increase in exchange reserves as a result of the emergency austerity program. *Sept. 10-15*, Canada Week at Seattle World Fair featured RCMP musical ride, the military tattoo, the RCAF band and aerial acrobatics, and performance of *Bousille et les justes* by Gratin Gélinas. *Sept. 10-19*, Commonwealth Prime Ministers' Conference held in London; Britain's proposed entry into the European Common Market opposed under certain conditions by Prime Minister Diefenbaker. *Sept. 11*, W. Walton Butterworth appointed U.S. Ambassador to Canada; arrived in Ottawa Nov. 30. Official opening of the 42-storey Royal Bank of Canada Building in Place Ville Marie, Montreal. *Sept. 13*, Negotiations completed for private sale of \$250,000,000 Government of Canada bonds to five life insurance companies in the U.S. Announcement by Finance Minister Nowlan of termination

of \$250,000,000 of the \$400,000,000 stand-by credit obtained in June from the Export-Import Bank. *Sept. 16*, Grant of \$2,500,000 to Laurentian University of Sudbury by International Nickel Company of Canada, Limited. *Sept. 18*, The 17th Session of the General Assembly of the UN opened in New York; Canadian delegation headed by External Affairs Minister Green; Sir Zafarullah Khan of Pakistan elected UN President. Four new states—Republic of Rwanda, Kingdom of Burundi, Jamaica, and the State of Trinidad and Tobago—admitted to UN by acclamation. *Sept. 20*, Official opening of potash mine at Esterhazy, Sask., inaugurating production from the world's largest known reserves of potash. President Mohammad Ayub Khan of Pakistan arrived for a five-day state visit to Canada. *Sept. 24*, Garden of the Provinces on Wellington Street, Ottawa, officially opened by Prime Minister Diefenbaker. *Sept. 27*, Canada's Twenty-Fifth Parliament opened. *Sept. 27-Nov. 4*, Exhibition of valuable canvasses loaned by Walter P. Chrysler to the National Gallery of Canada; doubts raised about authenticity of some of the paintings. *Sept. 20*, Canada's first spacecraft, the 320-lb. satellite *Alouette*, successfully launched from Vandenberg Air Force Base, California.

October: *Oct. 2*, Official opening of the first of two vocational training centres for Palestine Refugees, built with Canadian contributions to UNRWA, at Sibilin, Lebanon. *Oct. 3*, U.S. astronaut Walter M. Shիրra in *Sigma 7* spacecraft in nine-hour flight six times around the earth. The Sons of Freedom Doukhobors accepted offer of elementary school tuition for about 100 pupils on a temporary basis at Hope, B.C. *Oct. 8*, Algeria became the 109th member of the UN by acclamation of the General Assembly. *Oct. 9*, Uganda became an independent nation within the Commonwealth. *Oct. 10*, Two persons killed and five injured in collision between a TCA Viscount and an RCAF fighter at Bagotville, Que. *Oct. 11*, Roman Catholic prelates gathered for Ecumenical Council, the first in a century, in Vatican City. The first of 200 Canadian-built CF-104 *Super Starfighters* left for Zweibrücken, Germany, a part of the strike-reconnaissance squadrons being formed. *Oct. 11-13*, Pacific coast storm left at least 46 persons dead in B.C. and the U.S. *Oct. 13-14*, Ceremony commemorated the 150th anniversary of the Battle of Queenston Heights and the death of General Sir Isaac Brock. *Oct. 17*, 5-p.c. surcharge on most imported industrial machinery removed. *Oct. 18*, Revised estimates tabled in the House of Commons showed \$228,000,000 cut in government spending for the fiscal year as a result of austerity measures. *Oct. 22*, T.C. Douglas, national leader of the NDP, won by-election in Burnaby-Coquitlam, B.C. Bitter fighting began on China-India Frontier. U.S. President Kennedy disclaimed a naval quarantine of Cuba in protest against installation of nuclear missile launching bases; summit meeting proposed by Soviet Premier Khrushchev regarded as conciliatory and U.S.S.R. naval vessels withdrawn from area. *Oct. 23*, Death of John Thomas Haig, Winnipeg, former Progressive Conservative Government Leader in the Senate. *Oct. 24*, Dr. T. H. B. Symons, University of Toronto, appointed President and Vice-Chancellor of Trent University at Peterborough, Ont., scheduled to open in 1964. *Oct. 25*, Bedford Institute of Oceanography near Halifax, N.S., officially opened. *Oct. 27*, New agreement averted strike of 6,000 railway men on CPR. *Oct. 29*, India requested assistance in conflict with China. *Oct. 30*, Canada voted with 55 others to defeat Soviet resolution in UN General Assembly to seat Communist China. Soviet construction on missile bases in Cuba reported halted; U.S. quarantine and surveillance of Cuba reported lifted. *Oct. 31*, Reciprocal currency arrangements made in June with Federal Reserve Bank of New York and the Bank of England reduced by one

half. Two-mile bridge across St. Mary's River between Sault Ste. Marie in Ontario and Sault Ste. Marie in Michigan officially opened.

November: *Nov. 1*, Political Committee of the UN voted to boycott South Africa for its policy of apartheid; Canada, the U.S. and Britain among those opposed. *Nov. 2*, Federal Royal Commission appointed to study Canadian marine pilotage system in effort to reduce labour disputes. *Nov. 5*, Political Committee of the UN approved Canadian-proposed compromise formula for halting all nuclear bomb tests by Jan. 1. *Nov. 7*, Death of Mrs. Eleanor Roosevelt, widow of Franklin D. Roosevelt and internationally respected for her efforts toward human betterment. Rt. Hon. Vincent Massey, former Governor General of Canada, and J. Tuzo Wilson, Professor of Geophysics, University of Toronto, admitted as honorary fellows to Trinity College, University of Toronto, a rare distinction limited to six living persons. *Nov. 8*, Dr. Léo Marion, Senior Director of the National Research Council and Director of the Division of Pure Chemistry, received honorary doctorate from the Sorbonne. *Nov. 9-17*, At Royal Winter Fair, Toronto, world championship title for wheat won by F. W. Halliworth, Taber, Alta.; for flax by R. P. Robbins, Shaunavon, Sask.; for barley by Mrs. Martha Jussila, Manyberries, Alta.; for hay by R. P. Allan, Brucefield, Ont.; for oats by Myron D. Zacharko, Bruderheim, Alta.; for rye by W. Winters, Renfrew, Ont.; for potatoes by Anne MacAuley, East Baltic, P.E.I.; and for tobacco by G. Atkins, Baltimore, Ont.; the grand championship in the steer class was won by Don and Marion Johnson, Burrows, Sask., and the Queen's Guineas, award for 4-H Club members, by Ronald Storey, Guelph, Ont., for his Aberdeen Angus steer. *Nov. 11*, Portraits of 28 men who made significant contributions to Canadian agriculture unveiled in Canadian Agricultural Hall of Fame at Royal Agricultural Winter Fair, Toronto. *Nov. 12*, Application of Canada to hold a World's Fair in Montreal in 1967 granted by International Exhibition Bureau. *Nov. 13*, Bank rate reduced from 5½ p.c. to 4 p.c. Death of Senator T. D. Bouchard of Montreal. *Nov. 14*, Sioux rock carving depicting Indian legend of the White Dog, uncovered at Dog Lake near Port Arthur. *Nov. 15*, Liberal Government of Premier Jean Lesage returned to power in Quebec election. Surcharges imposed on certain goods on June 24 eliminated. *Nov. 19*, Liberal Government of Premier Joseph R. Smallwood returned to power in Newfoundland election—the fifth consecutive time since 1949. *Nov. 20*, Appointment of Dr. H. Locke Robertson as principal of McGill University announced. UN approved Canadian plan for worldwide measurement of atomic radiation. *Nov. 22-Dec. 1*, British Empire Games held in Perth, Australia; Canada placed fourth, with four gold medals won by Bruce Kidd of Toronto (track), Richard Pound of Montreal (swimming), Mary Stewart of Vancouver (swimming), and Harry Mann of Prince George, B.C. (boxing), and 27 other medals. *Nov. 26*, Resumption of disarmament negotiations in Geneva. *Nov. 28*, Death of Wilhelmina, former Queen of the Netherlands. *Nov. 29*, Public Works Minister Fulton announced his decision to seek election as leader of the Progressive Conservative Party in British Columbia. Senator M. Wallace McCutcheon, Minister without Portfolio, appointed chairman of Cabinet Committee to direct implementation of Glassco Commission recommendations. *Nov. 30*, Over 100 residents of Cornwall, Ont. required hospital treatment for chlorine gas poisoning when fumes escaped from a railway tank car. Acting Secretary-General of the UN, U Thant of Burma, elected to regular term of office to serve until Nov. 3, 1966.

December: Six Canadian transport aircraft sent to India to help repel aggression on the Himalayan frontier. *Dec. 2*, Winnipeg Blue Bombers retained

Canadian football title, winning Grey Cup match with Hamilton Tiger-Cats by score of 28-27. *Dec. 5*, Mrs. Claire Kirkland-Casgrain, Montreal lawyer, appointed Minister without Portfolio in Quebec Legislature, the first woman Cabinet minister in the history of the province. *Dec. 6*, Dr. Murray L. Barr, London, Ont., received from U.S. President Kennedy one of the first awards from a foundation set up in the name of the President's late brother to assist work in overcoming mental retardation, and a grant of \$25,000 to further his research. *Dec. 7*, Dr. Hugh Keenleyside, former Canadian Ambassador and senior UN official, first recipient of the Vanier Medal of the Institute of Public Administration. *Dec. 9*, Tanganyika remained a member of the Commonwealth upon achieving status as a republic. *Dec. 10*, Progressive Conservative Government of Premier Walter R. Shaw returned to power in Prince Edward Island election. *Dec. 12*, Warwick Fielding Chipman, Montreal, former Canadian diplomat, presented with Italy's highest award for merit in Italian studies for his translation into English of Dante's *Inferno*. *Dec. 14*, Progressive Conservative Government of Premier Duff Roblin returned to power in Manitoba election. *Dec. 18*, CNR Board of Directors to study ways of attracting more French-speaking Canadians into the organization. *Dec. 20*, Report of the Royal Commission on Unemployment Insurance tabled in the House of Commons. *Dec. 21*, Prime Minister Diefenbaker arrived in the Bahamas for talks with British Prime Minister Macmillan and U.S. President Kennedy. Canada accorded recognition to the Government of the Yemen Arab Republic. Mary Stewart of Vancouver chosen Canada's outstanding female athlete of 1962 in Canadian Press poll. Other women acclaimed for outstanding achievement during the year were: Mayor Charlotte Whitton of Ottawa and Hon. Claire Kirkland-Casgrain of Montreal in public affairs; Mrs. Hugh John Flemming, founder of the international Kindness Club; Mrs. Sheila Burnford, author; Miss Kate Reid, actress; and Miss Teresa Stratas, opera singer. *Dec. 22*, Death of Solon Low, former national leader of the Social Credit Party. *Dec. 24*, Death of former Senator Thomas Farquhar of Little Current, Ont.

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January: Second Battalion, Royal Canadian Regiment, London, Ont., awarded Duke of Edinburgh trophy in a Commonwealth competition; criteria were small arms efficiency and physical standards. Exhibition of contemporary Canadian painting and graphic art sent by the National Gallery of Canada to Africa for eight-month tour. Eliza Edith Mayhew, Victoria, B.C., won first annual award of the Sir Otto Beit Medal for Sculpture offered by the Council of the Royal Society of British Sculptors. First piece of creative fiction written by an Eskimo for Eskimo children published. *Jan. 1*, Eastview became Ontario's 32nd city. *Jan. 3*, General Lauris Norstad, former Supreme Allied Commander, Europe, stated that if Canada does not accept nuclear weapons for its forces in Europe it will not meet its commitments to NATO. *Jan. 7*, Contracts awarded for construction of Red River floodway, the largest earth-moving job ever to be undertaken in Canada. Canada and the Republic of Mali established diplomatic relations. *Jan. 10*, Appointment of M. J. Coldwell, former national leader of the CCF, as Resident Fellow at Carleton University's Institute of Canadian Studies announced. *Jan. 11*, Fiftieth anniversary of the start of activities of the 4-H Club movement, begun with about 400 Manitoba boys and girls in 1913 and now with a national membership of more than 72,000; commemorative projects included an active part in the World Freedom from Hunger Campaign and interprovincial exchange visits. *Jan. 11-12*, First meeting of the Canada-Japan Ministerial Committee, es-

tablished by Prime Minister Diefenbaker and Prime Minister Ikeda in June 1961, held in Tokyo; discussions covered trade and economic relations. *Jan. 14*, Canada and the Republic of Korea (South Korea) established diplomatic relations. *Jan. 18*, Death of Hon. Hugh Gaitskill, British Labour Party leader. Sod-turning ceremony for Ontario Research Community—a 300-acre campus of laboratories to be built by private industry and the Ontario Research Foundation—near Toronto. *Jan. 29*, Britain lost 15-month struggle to enter European Common Market. *Jan. 31*, United States in open disagreement with Canada's nuclear weapons policy regarded by all Party leaders in the House of Commons as "unwarranted intrusion into Canadian affairs".

February: *Feb. 2*, Nyasaland became an independent nation within the Commonwealth after 65 years of British rule. Sod-turning ceremony for Fathers of Confederation Memorial Building took place in Charlottetown, P.E.I., Premier Stanfield of Nova Scotia officiating. Apology by U.S. State Department to Canadian Government for handling of nuclear arms controversy. Death of Chief Justice Patrick Kerwin. *Feb. 4*, Dr. B. G. Ballard appointed President of the National Research Council. Resignation of Defence Minister Harkness over disagreement on nuclear arms policy. *Feb. 5*, Very Rev. Eugene Carlisle Lebel appointed first President and Vice-Chancellor of the new non-denominational University of Windsor. *Feb. 6*, Dissolution of Twenty-Fifth Parliament of Canada. *Feb. 7*, Death of Hon. Esioff Léon Patenaude of Montreal, former Lieutenant-Governor of Quebec and senior member of the Queen's Privy Council for Canada. *Feb. 9*, Announcement of the World Health Organization approval of a Canadian-initiated plan for rapid dissemination through the world body of information on the dangerous side-effects of drugs. *Feb. 11*, Three striking loggers killed and nine others wounded in shooting involving loggers and independent bushworkers near Kapuskasing, Ont. Hon. Roland Michener named chairman of Manitoba's Royal Commission on Local Government Organization and Finance. *Feb. 12*, Prince Albert of Belgium, heading an economic mission, arrived in Canada for 12-day visit. *Feb. 13*, Death of George R. Clark, Deputy Minister of Fisheries, in Tokyo. Ontario police round up individuals involved in violence at Kapuskasing; 19 murder charges against independent woodcutters and 400 riot charges laid against striking loggers. Charter for new Brock University in Niagara Peninsula, to open in 1964, presented by Premier Robarts of Ontario. *Feb. 14*, Thirty-one-day strike of loggers at Kapuskasing ended, with the dispute going before an arbitration board. *Feb. 16*, Canadians won all four titles in the North American figure skating championships for the first time in 19 years—Donald McPherson of Stratford, Ont., men's singles; Wendy Griner of Toronto, women's singles; Debbi Wilkes and Guy Revell of Unionville, Ont., pairs; and Paulette Doan and Kenneth Ormsby of Toronto, ice dancing. *Feb. 18*, Justice Minister Fleming announced his retirement from public life after 25 years of service, for personal reasons. Announcement of an anonymous gift of \$4250,000 to the Canada Council to enable Canadian students to undertake advanced studies in medicine, science and engineering in Canada, the largest gift received by the Council since its establishment in 1957. Canada Council medals presented to Arthur Lismer, artist; Claude Champagne, musician; and Leonard W. Brockington, writer and scholar. Report of the Restrictive Trade Practices Commission presented to the Minister of Justice; recommendations included abolition of patents on drugs and better information for doctors about the cost of the products they prescribe. *Feb. 19*, Bruce Kidd of Toronto awarded the Viscount Alexander Trophy for the outstanding junior male athlete for the

fourth consecutive time. Canada recognized the new Government of Iraq, recently come to power after a revolution. Certain surcharges on imports imposed in June 1962 were eliminated entirely and others reduced, reflecting the continued improvement in Canada's international transactions. *Feb. 22*, Prime Minister Diefenbaker, accompanied by a trade delegation, left for a three-day visit to London and talks with Prime Minister Macmillan. The 1963 Massey Medal of the Royal Canadian Geographical Society awarded to Graham W. Rowley, archaeologist, explorer, army officer and administrator, for outstanding geographical work in the Canadian Arctic. *Feb. 26*, Prime Minister Diefenbaker acclaimed a Freeman of the City of London.

March: Winners of Governor General's Literary Awards for 1962 announced: James Reaney (poetry and drama in English); Kildare Dobbs (fiction in English); Marshall McLuhan (critical and expository prose); Jacques Languiard (poetry and drama in French); Jacques Ferron (fiction in French); and Gilles Marcotte (other literary styles in French). By Act of the B.C. Legislature, Victoria College converted to University of Victoria, Simon Fraser University (Burnaby) created, and university powers given to Notre Dame University College at Nelson. Trent University at Peterborough incorporated, to be opened September 1964. *Mar. 1*, Donald McPherson of Stratford, Ont., won the men's world figure skating championship at Cortina, Italy. *Mar. 15*, a Viking sword, dating back to the middle of the ninth century, presented by General Odd Bull, Chief of Staff of the Royal Norwegian Air Force, to the Canadian Minister of National Defence in appreciation of help rendered by the Canadian Armed Services to the Norwegian Services, and placed in the Canadian War Museum; evidence of a Viking settlement in northern Newfoundland 500 years before Columbus' time was found in 1961. *Mar. 18*, Report of Royal Commission on Crime in Ontario released. *Mar. 21*, Death of L. D. Crestohl, Liberal Member of Parliament for Montreal-Cartier. *Mar. 23-May 3*, 1963 Trade promotion program of Dept. of Trade and Commerce "Operation World Markets" conducted. *Mar. 23-31*, 200 foreign businessmen and government officials were brought to Canada to publicize Canadian machinery products. *Mar. 25*, Dr. Frank G. Patten, Superintendent of Ottawa secondary schools, honoured as "Citizen of the Year" by B'nai B'rith Ottawa Lodge. St. Helen's Island named as site of the 1967 World's Fair. *Mar. 29*, Vandals shattered the Wolfe Monument on historic Plains of Abraham. Death of Gaspard Fautoux, former Speaker of the House of Commons and Lieutenant-Governor of Quebec.

April: *Apr. 1-4*, International scientific conference at National Research Council, Ottawa, featured study of NRC invention of U.V. Helava, an analytical plotter being manufactured in Italy. *Apr. 2-4*, A National Canadian Samples Show, sponsored by the Department of Trade and Commerce and held in Toronto, was attended by more than 600 buyers from Europe, the U.S. and the West Indies. *Apr. 8*, Twenty-Sixth General Election; party standing—129 Liberal, 95 Progressive Conservative, 23 Social Credit, 17 New Democratic Party and 1 Independent Social Credit. *Apr. 9*, Sir Winston Churchill made an honorary U.S. citizen, a tribute unique in U.S. history. *Apr. 10*, New regulations under the Food and Drugs Act give increased federal control over sale of drugs. *Apr. 16-May 3*, Export Trade Promotion Conference held at Ottawa at which nearly 1,200 Canadian businessmen discussed export opportunities with Trade Commissioners. *Apr. 18*, The Toronto Maple Leafs won the Stanley Cup, symbol of hockey supremacy. *Apr. 19-22*, Official visit to Ottawa of Governor of Vermont Philip H. Hoff and members of the State legislature. *Apr. 20*, W. V. O'Neill killed in one

of several explosions attributed to terrorist activity of the Front de Liberation du Québec (FLQ) in Montreal. *Apr. 22*, Liberal Government of Premier Louis J. Robichaud returned to power in New Brunswick election. Report of the Quebec Royal Commission on Education recommended formation of a Ministry of Education and a complete reorganization of the administrative structure of the Quebec school system. *Apr. 23*, Mr. Justice Robert Taschereau appointed Chief Justice of the Supreme Court of Canada. *Apr. 24*, Marriage of Princess Marina of Kent and cousin of H.M. Queen Elizabeth, to Angus Bruce Ogilvy in Westminster Abbey. *Apr. 29-30*, Tun Abdul Razak Bin Hussein, Al Haj, Deputy Prime Minister of Malaya, guest of the Canadian Government.

May: *May 1*, Takeover into Hydro-Québec (Quebec Hydro-Electric Commission) of 11 private power companies by Quebec Government became effective. *May 1-3*, Prime Minister Pearson visited London for consultations with Prime Minister Macmillan; he was received by H.M. Queen Elizabeth and appointed to the British Privy Council. *May 3*, Hay River and Fort Simpson, N.W.T., inundated by flood waters; more than 1,600 residents airlifted to Fort Smith, Yellowknife and Edmonton. *May 4*, Construction commenced at Belle Plaine, Sask., of multi-million-dollar plant for the world's first production of potash by solution-mining technique. *May 5*, Fourth Pan-American Games, with competitors from 21 Western Hemisphere countries, ended in São Paulo, Brazil; Canada won 10 gold medals, 26 silver and 27 bronze, a record second only to that of the U.S. *May 8*, Air evacuation began of Canadian citizens from troubled Haiti. *May 10-11*, Prime Minister Pearson visited U.S. President Kennedy at Hyannis Port; announced acceptance of the gift of the former Roosevelt family home on Campobello Island, N.B., to be used by both countries for public purposes. *May 14*, Upheaval in Social Credit Party resulting in split into two groups—one under National Leader Robert Thompson and the other the Quebec group under Réal Caouette. Agreement signed for the purchase by India of 16 Caribou transport aircraft. Hon. Walter Gordon appointed Canadian Governor of the International Bank and the International Monetary Fund, succeeding Hon. Donald Fleming. *May 15*, Louis Rasminsky appointed Canadian Alternate Governor of the International Bank. *May 16*, Gordon Cooper, U.S. astronaut, successfully completed a 22-orbit flight lasting more than 34 hours. *May 17*, Contract awarded for construction of the National Library and Archives building on Wellington Street, Ottawa. Sgt. Major Walter Leja seriously injured in dismantling one of several bombs set in mail boxes in Westmont, Que.; the Quebec Government offered a \$50,000 reward for information leading to the conviction of any person responsible for an act of terrorism in Quebec since *Apr. 1*. *May 22-24*, Ministerial meeting of NATO in Ottawa. *May 23-25*, UNESCO festival and seminar on art films held in Ottawa. *May 24*, Replica of a relief carved in the workshop of Eleusis presented to Canada as a token of friendship and gratitude for postwar aid given to the people of Greece. *May 27*, Announcement that seven graduates from Canadian institutes of technology will attend postgraduate courses in a large company in Dusseldorf, Germany, the first such project under the auspices of the Dept. of Labour. Northern Alberta Institute of Technology at Edmonton opened. Dr. Wilder Penfield, Montreal neurosurgeon, installed as the first Canadian member of the Polish Academy of Science. *May 29*, Official opening of a new permanent exhibit at the National Museum of Canada—Hall of Canadian Eskimos—by Northern Affairs Minister Laing, inaugurating the Museum's modernization and enlargement program.

June: *June 2*, Dr. Charles F. Comfort, Director of the National Gallery, awarded the Italian Medaglio al Merito Culturale for his efforts to strengthen cultural ties between Canada and Italy. *June 3*, Labour College of Canada, the first in North America, opened in Montreal. Death of His Holiness Pope John XXIII. Government decision to establish a 12-mile exclusive fisheries zone off Canadian coastline, beginning in mid-May 1964, announced. *June 5*, Canadian Government contribution of \$10,000 for provision of supplies for victims of cyclone and flood in East Pakistan announced. Death of Senator Donat Raymond of Montreal. *June 6*, Trailer camp leased by the Federal Government temporarily to accommodate victims of Hay River, N.W.T., flood. *June 7*, House of Commons approved establishment of a Special Committee on Defence. *June 8*, Ceremony commemorating 150th anniversary of the Battle of Stoney Creek between Britain and the U.S. (June 8, 1813); speakers were Prime Minister Pearson and U.S. Ambassador Butterworth. *June 10-11*, Georges Schoeters, 33-year-old native of Belgium, Raymond Villeneuve, 19-year-old student, and Gabriel Hudon, 20-year-old draughtsman, identified themselves as the three founding members of the FLQ. *June 12*, Final report of the Glassco Royal Commission released. *June 15*, Charges of breach of Budget security brought by Opposition against Finance Minister Gordon when it was revealed that three "outside" experts had assisted in preparation of the Budget. *June 17*, Social Credit Government of Premier Ernest C. Manning returned to power in Alberta election. *June 19*, The world's first woman cosmonaut, Valentina Tereshkova of the U.S.S.R., landed safely after 49 orbits of the earth that began three days earlier; at the same time, the U.S.S.R.'s fifth cosmonaut, Lt.-Col. Valery Bykovsky, landed after 82 orbits begun five days earlier. *June 21*, Giovanni Batista Cardinal Montini, Archbishop of Milan, elected 262nd ruler of the Roman Catholic Church; to be known as Pope Paul VI; coronation took place June 30. *June 20*, The Ottawa Technical High School Band left on a six-week tour of Europe; more than 20 appearances in England and 10 in Holland were scheduled. *June 23*, Death of Dr. H. A. Bruce of Toronto, former Lieutenant-Governor of Ontario. *June 25*, Voluntary medical care insurance program of Alberta Government began with unequalled support of both doctors and insurance companies. *June 29*, Fines of \$200 each paid by 138 bushworkers of the Lumber and Sawmill Workers' Union (OLO) convicted on unlawful assembly charges arising from a Feb. 11 striker-settler clash at Reesor Siding, Ont.

July: *July 2*, In response to urgent need in Barbados, Canada provided 50,000 doses of polio vaccine and several respirators. *July 3*, Death of Senator John G. Higgins of St. John's, Nfld. Miss Margaret MacLaren, head of the St. John Ambulance Nursing Services in Canada, invested as a Dame Grand Cross of the Order of St. John of Jerusalem, the first Western Hemisphere woman to receive this honour. *July 4-6*, Visit of Sir Robert Menzies, Prime Minister of Australia, to Canada. *July 5*, Four of the five persons charged with non-capital murder in the death of Wilfred V. O'Neill, killed in explosion of a time bomb in Montreal, committed for trial. *July 10*, Accord between the Federal and British Columbia Governments regarding the Columbia River Treaty announced. *July 11*, Commencement of construction of a \$50,000,000 iron ore pelletizing plant at Pointe Noire on the Quebec side of the Labrador-Quebec border announced by Premier Lesage. *July 12*, Monument of Queen Victoria in Quebec destroyed in dynamite explosion. Death of Herbert H. Hannam, President of the Canadian Federation of Agriculture since 1949. *July 15*, Report of Mr. Justice T. G. Norris, results of the inquiry of the Royal Commission on Great Lakes Shipping, tabled in the

House of Commons; recommended appointment of a board of trustees to control the major maritime transportation unions. *July 19*, President Julius Nyerere of Tanganyika visited Ottawa as guest of the Canadian Government. *July 20*, Scientists from other parts of the world gathered in various parts of Canada to study eclipse of the sun. *July 21*, British freighter and Bermuda ore carrier collided in St. Lawrence River; 18 dead and 15 missing. *July 22*, Federal Act providing for the establishment of a Department of Industry received Royal Assent; Hon. C. M. Drury to be Minister. Membership of the Royal Commission on Bilingualism and Biculturalism, under the co-chairmanship of André Laurendeau and Davidson Dunton, announced. Sir Zafrulla Khan, President of the United Nations General Assembly, visited Ottawa. *July 27*, Perforated breakwater, developed by the National Research Council to reduce wave action that prevents berthing of ships, officially opened at Baie Comeau, Que. *July 30*, Announcement of entry of Japan as a full member of OECD. *July 31*, Federal Act increasing salaries of all federally appointed judges of superior, district and county courts received Royal Assent.

August: *Aug. 1*, End of dispute over ownership of the B.C. Electric Company; the B.C. Government accepted the valuation placed on that utility by the B.C. Supreme Court. *Aug. 2*, Federal Act establishing the Economic Council of Canada received Royal Assent; John J. Deutsch appointed Chairman. Federal Act increasing sessional and other allowances of Members of the House of Commons and the Senate, received Royal Assent. Policy of full twinning of locks of the Welland Canal announced by Transport Minister McIlraith; construction to begin in the winter of 1963-64 and to be completed in 1968. A second long-term wheat sales agreement with Communist China worth \$300,000,000 or more announced by Trade Minister Sharp. (First agreement signed in April 1961 worth \$400,000,000.) *Aug. 5*, The U.S., Britain and the U.S.S.R. signed a treaty in Moscow banning nuclear tests in the atmosphere, outer space and under water; Canada signed *Aug. 8*. *Aug. 5-6*, Annual Conference of Provincial Premiers held at Halifax. *Aug. 7*, Canadian gift to Greece of \$1,000,000 worth of food products. *Aug. 11*, The Bank of Canada increased its lending rate from 3½ p.c. to 4 p.c. *Aug. 12*, Canada's 1967 World's Fair site at Montreal inaugurated by Prime Minister Pearson; Federal Government's contribution will be at least \$50,000,000. *Aug. 15*, Eleven-day congress of Anglican Church, comprising 1,000 delegates from 78 countries, began in Toronto. *Aug. 16*, Canada and the U.S. reached agreement on conditions under which nuclear warheads will be made available for Canadian forces engaged in North American defence and assigned to NATO. *Aug. 23*, Announcement of approval by Governments of Canada and the U.S. for Canadian participation in testing of experimental communication satellites. *Aug. 28*, The Sept. 21 opening of Place des Arts Concert Hall in Montreal cancelled after two unions failed to agree on which should represent performers at the Hall.

September: *Sept. 1*, Quebec members of Social Credit Party voted to disown Robert N. Thompson as national party leader. *Sept. 5*, Convention of Social Credit Party ended; Robert N. Thompson remained as national leader and Quebec members backed Réal Caouette. *Sept. 6*, Resignations of four senior staff members of the National Museum over plans for new building. Thirty-five high-unemployment areas in Canada designated by the Federal Government to be tax-free for three years as inducement to development of new industries. Pierre Dupuy, retiring Canadian Ambassador to France, appointed Commissioner-General of the

1967 World's Fair. *Sept. 9*, Federal-provincial conference opened in Ottawa. *Sept. 13*, Resignation of Hon. George A. Drew as Canadian High Commissioner to Britain. *Sept. 16*, The Federation of Malaysia created, uniting the Federation of Malaya, the State of Singapore and the Crown colonies of North Borneo and Sarawak, and became a member of the Commonwealth. Announcement of agreement with the U.S.S.R. for the largest single wheat sale in Canadian history; value of shipments to that country in the current crop year to approach \$500,000,000. *Sept. 17*, Eighteenth session of the UN General Assembly opened; Prime Minister Pearson addressed the Assembly and outlined proposals for strengthening the UN peace-keeping forces. *Sept. 18*, Princess Alice, Countess of Athlone, arrived in Ottawa on semi-official visit; as Colonel-in-Chief of the Princess Louise Dragoon Guards, she presented a regimental standard in a ceremony on Parliament Hill on *Sept. 21*. *Sept. 19*, Plans for a \$100,000,000 redevelopment of the Confederation Square and Union Station area of Ottawa announced. *Sept. 20*, The Canadian freighter *Howard L. Shaw* sailed from Chicago empty of cargo after a five-month boycott marked by shooting and an explosion, as conferences between union and government officials of the U.S. and Canada indicated possibility of a government trusteeship over maritime unions in Canada. Department of External Affairs announcement that Canada is sending relief supplies of powdered milk and tinned meat to Brazil following severe droughts and forest fires. *Sept. 21*, Montreal's new concert hall, Place des Arts, opened with performance by Montreal Symphony Orchestra; opening marred by demonstration of separatists. *Sept. 24*, Canadian delegation headed by Privy Council President Lamontagne left for Commonwealth conference in London on finance and trade preceding International Monetary Fund meeting. *Sept. 25*, Death of Senator C. V. Emerson of Saint John, N.B. *Sept. 26*, Progressive Conservative Government of Premier John P. Roberts returned to power in Ontario election, with an increased majority. *Sept. 27*, Establishment of \$2,000,000 C. D. Howe Memorial Foundation set up by individual and corporation contributions to give financial assistance to young persons who give promise of leadership and decisive achievement. *Sept. 30*, Social Credit Government of Premier W. A. C. Bennett returned to power in British Columbia election.

October: *Oct. 1*, Death of Miss Margaret MacLaren, Superintendent-in-Chief, St. John Ambulance Brigade in Canada. *Oct. 2*, Twenty men cleared on charges of non-capital murder in the shooting of three striking bushworkers and on charges of rioting, by Ontario Supreme Court Grand Jury; three charged with possession of offensive weapons and fined \$100 each. *Oct. 4*, Strike of 3,800 longshoremen in three St. Lawrence River ports began, delaying shipment of wheat to U.S.S.R. *Oct. 7*, Eleven members of FLQ pleaded guilty to terrorist activities; sentences ranging from six months to 12 years were imposed for charges ranging from public mischief to manslaughter. *Oct. 7-9*, His Imperial Majesty Haile Selassie I, Emperor of Ethiopia, on state visit to Canada. *Oct. 8*, Progressive Conservative Government of Premier R. L. Stanfield returned to power in Nova Scotia election. *Oct. 9*, Agreement between Canada and U.S. to provide for the storage of nuclear-tipped missiles at two U.S. Air Force interceptor bases in Newfoundland announced by Prime Minister Pearson. *Oct. 10*, Nobel Peace Prize for 1963 awarded to the International Red Cross Committee and the League of Red Cross Societies in recognition of their work in the international field. *Oct. 12*, Open criticism by U.S. leaders of Canadian proposal to put maritime unions under government trusteeship aroused indignant Canadian reaction. Quebec longshoremen's strike forced CPR ship *Empress of Canada* to sail from Montreal to Halifax

to disembark her passengers. Death of Senator Mark Drouin of Quebec, Que., former Speaker of the Senate. *Oct. 15*, Canada's contribution to the UN Special Fund doubled to \$5,000,000. *Oct. 16*, Old age security pensions increased to \$75 monthly. *Oct. 18*, Longshoremen of the Seafarers' International Union left their ships and marched on Parliament Hill at Ottawa in protest against trusteeship. Lord Home invited to form a government to succeed Sir Harold Macmillan who resigned as Prime Minister of Britain on the grounds of ill health. *Oct. 21*, House of Commons concurred in report (Oct. 9) of Committee on Privileges and Elections to give precedence in the House to the Thompson Social Creditors and to recognize the Caouette Social Credit Rally (Ralliement des Creditistes) as a separate group in the House. Announcement of new nuclear agreement between Canada and Britain on the development of heavy water reactors using natural or enriched uranium fuel, a Canadian-pioneered system. *Oct. 23*, The Maritime Transportation Unions Trustee Act placing the maritime unions of Canada under the management and control of trustees received Royal Assent; three-man board of trustees appointed. To be eligible to stand for election to the British House of Commons, Lord Home entered a "disclaimer" of his four hereditary titles. *Oct. 24*, SIU longshoremen voted to end their walkout and return to work. *Oct. 28*, Government announcement that \$45,000 had been made available from Canadian sources, of which \$10,000 was a grant from public funds to victims of the earthquake at Skopje, Yugoslavia. *Oct. 30*, U.S. Grain Workers Union, Local 418, ordered by Chicago court to pay \$25,500 in fines for refusing to load Canadian ships. Young member of FLQ given three-year prison sentence for Westmont bomb incident that crippled Sgt. Maj. Walter Leja; three others placed on probation.

November: *Nov. 1*, SIU documents seized by RCMP. *Nov. 6-7*, SIU leader Hal C. Banks and others charged with conspiring to cause bodily harm by assault to Ship's Captain H. F. Walsh of Welland, Ont., in 1957. *Nov. 6*, Death of John Wilson McConnell, former President of the Montreal Star. TCA jet airliner with 90 passengers and a crew of seven crashed on take-off from London Airport in fog; no lives lost. *Nov. 7*, Sir Alec Douglas-Home elected Member of British Parliament for Kinross and West Perthshire in a by-election. *Nov. 11-16*, Canada Week Trade Fair in Philadelphia, U.S.A., sponsored by the Dept. of Trade and Commerce; featured, in addition to Canadian products displays, were champion Canadian skaters and an RCN flotilla. *Nov. 13*, Unveiling of portrait of Rt. Hon. R. B. Bennett, the late Canadian Prime Minister, to be hung near the Commons Chamber in Ottawa. Opening of the Royal Agricultural Winter Fair in Toronto; world championship wheat title won by George Lucco of Lethbridge, Alta.; title for barley by J. E. French of Mitchell, Ont.; for flax by John E. Cotton of Kenville, Man.; for oats by Jeffrey Abbott of South Edmonton, Alta.; and for potatoes by Mrs. A. R. Chorney of East Selkirk, Man.; Sandra Peart of Guelph, Ont., won Queen's Guinea; top prize for 4-H Club members, for her Shorthorn steer. *Nov. 15*, Accidental death of Senator Duncan K. MacTavish of Ottawa. Death of Senator Calvert Coates Pratt of St. John's, Nfld. Death of Francis C. C. Lynch former head of the National Museum. *Nov. 18*, Governor General and Mme. Vanier received honorary councillorships—the highest title the Canadian Red Cross Society can bestow in recognition of their service to the Red Cross during and after the Second World War. *Nov. 19*, Death of Mayor Donald Summerville of Toronto. *Nov. 22*, Death of U.S. President John Fitzgerald Kennedy in Dallas, Texas, from an assassin's bullet; burial was in Arlington National Cemetery Nov. 25. Vice-President Lyndon Baines Johnson sworn in as 36th President of the United States.

APPENDIX

Certain information given in Chapter II on Constitution and Government (closed off Apr. 30, 1963) is brought up to the date of going to press (Nov. 15, 1963) in this Appendix.

Page 69, Table 4

On July 25, 1963, Hon. Charles Mills Drury, Minister of Defence Production, was appointed Minister of Industry.

Pages 70-71, Table 5

Queen's Privy Council for Canada appointments from Apr. 30 to Nov. 15, 1963 are given in the Register of Official Appointments, p. 1164.

Pages 73-74, Table 8

Senate appointments from Apr. 30 to Nov. 15, 1963 are given in the Register of Official Appointments, p. 1165. Deaths of Senators, creating vacancies, are noted in the Chronology. At Nov. 15, 1963 there were five vacancies.

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The final list of Members of the House of Commons, the number of voters on the list and the votes polled at the Twenty-Sixth General Election of Apr. 8, 1963, and the provincial summary of the voters and votes polled, which data were not available at the time of printing of Chapter II, are here given in Tables 1 and 2.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963.

Speaker.....	HON. ALAN A. MACNAUGHTON
Prime Minister.....	Rt. Hon. LESTER B. PEARSON
Leader of the Opposition.....	Rt. Hon. JOHN G. DIEFENBAKER
Clerk of the House of Commons.....	LÉON J. RAYMOND

NOTE.—The vote is summarized by provinces in Table 2, p. 1185. The leaders of the political parties are indicated by asterisks (*). For Parliamentary Secretaries, see p. 69. This information, except the population of constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. Lib.=Liberal; P.C.=Progressive Conservative; S.C.=Social Credit; N.D.P.=New Democratic Party; L.-Lab.=Liberal-Labour.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Newfoundland— (7 members)							
Bonavista-Twillingate..	50,527	24,706	16,185	11,748	Hon. J. W. PICKERSGILL	Ottawa, Ont.....	Lib.
Burin-Burgeo.....	48,673	22,684	14,682	12,167	C. W. CARTER.....	St. John's.....	Lib.
Grand Falls-White							
Bay-Labrador.....	82,433	41,239	25,977	18,233	C. R. M. GRANGER.....	St. John's.....	Lib.
Humber-St. George's..	74,015	32,151	22,897	13,605	H. M. BATTEN.....	Corner Brook.....	Lib.
St. John's East.....	77,070	38,018	28,854	14,768	J. P. O'KEEFE.....	St. John's.....	Lib.
St. John's West.....	68,979	33,693	26,327	14,724	R. J. CASHIN.....	St. John's.....	Lib.
Trinity-Conception....	56,156	28,830	17,253	12,331	J. R. TUCKER.....	St. John's.....	Lib.
Prince Edward Island— (4 members)							
Kings.....	17,893	9,969	9,108	4,705	J. MULLALLY.....	Souris.....	Lib.
Prince.....	40,894	20,588	17,675	8,967	Hon. J. W. MACNAUGHT	Ottawa, Ont.....	Lib.
Queens.....	45,842	26,472	42,703	11,666	Hon. J. A. MACLEAN...	Lewis, Beatons Mills.....	P.C.
Nova Scotia— (12 members)				11,608	H. N. MACQUARRIE.....	Victoria.....	P.C.
Antigonish.....							
Guysborough.....	27,634	14,905	12,852	6,947	J. B. STEWART.....	Bayfield.....	Lib.
Cape Breton North-Victoria.....	50,957	25,646	21,490	10,508	R. MUIR.....	Sydney Mines....	P.C.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
—continued.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
No.	No.	No.	No.	No.			
Nova Scotia—concluded							
Cape Breton South.....	85,001	42,671	36,986	14,307	D. MACINNIS.....	Glace Bay.....	P.C.
Colchester-Hants.....	60,751	34,513	29,511	14,387	C. F. KENNEDY.....	Truro.....	P.C.
Cumberland.....	37,767	21,573	18,079	9,034	R. C. COATES.....	Annherst.....	P.C.
Digby-Annapolis-Kings	76,073	39,793	34,091	16,887	Hon. G. C. NOWLAN.....	Wolfville.....	P.C.
Halifax.....	225,723	122,846	183,402	46,274	J. E. LEYD.....	Halifax.....	Lib.
Inverness-Richmond.....	33,907	19,068	15,448	8,373	G. A. REGAN.....	Halifax.....	Lib.
Pictou.....	43,908	24,809	20,793	10,566	Hon. A. J. MACEachern	Ottawa, Ont.....	Lib.
Queens-Lunenburg.....	48,153	29,684	24,105	12,591	H. R. MacEwan.....	New Glasgow.....	P.C.
Shelburne-Yarmouth-Clare.....	47,133	26,366	22,595	11,607	L. R. CROUSE.....	Lunenburg.....	P.C.
					F. T. ARMSTRONG.....	Yarmouth.....	Lib.
New Brunswick—							
(10 members)							
Charlotte.....	23,285	13,726	11,939	6,279	A. M. A. McLEAN.....	Blacks Harbour.....	Lib.
Gloucester.....	66,343	29,182	23,423	13,344	Hon. H.-J. ROBICHAUD.....	Ottawa, Ont.....	Lib.
Kent.....	26,667	12,294	10,077	5,971	G. CROSSMAN.....	Buctouche.....	Lib.
Northumberland-Miramichi.....	50,035	23,240	18,182	10,148	G. R. McWILLIAM.....	Newcastle.....	Lib.
Restigouche-Madawaska.....	79,956	36,012	29,139	14,111	J.-E. DURÉ.....	Campbellton.....	Lib.
Royal.....	37,548	21,806	17,882	9,524	R. G. L. FAIRWEATHER.....	Rothessay.....	P.C.
Saint John-Albert.....	101,736	57,601	42,112	21,584	T. M. BELL.....	Saint John.....	P.C.
Victoria Carleton.....	43,219	22,180	18,039	10,572	Hon. H. J. FLEMMING.....	Juniper.....	P.C.
Westmorland.....	93,879	50,361	41,905	19,989	S. H. RIDEOUT.....	Moncton.....	Lib.
York-Sunbury.....	75,468	38,330	32,859	15,827	J. C. MacRAE.....	Fredericton.....	P.C.
Quebec—							
(75 members)							
Argenteuil-Deux-Montagnes.....	64,667	34,905	29,027	12,324	V. DROUIN.....	St. Eustache.....	Lib.
Beauce.....	61,332	30,234	25,211	12,627	G. PERRON.....	St. Joseph de Beauce.....	S.C.
Beauharnois Salaberry.....	70,191	38,619	31,299	15,892	G. LAFRANÇOIS.....	Valleyfield.....	Lib.
Bellechasse.....	32,513	15,834	12,336	5,434	H. LAVERDIÈRE.....	St. Lazare Village.....	Lib.
Berthier-Maskinongé-Delanauère.....	48,749	25,806	20,573	8,471	R. PAUL.....	Louiseville.....	P.C.
Bonaventure.....	42,962	20,632	16,304	9,092	A. BÉCHARD.....	Carleton sur Mer.....	Lib.
Brome-Missisquoi.....	43,217	23,734	18,971	8,411	W. H. GRAPTEY.....	Knowlton.....	P.C.
Chambly-Rouville.....	60,959	32,287	24,770	13,850	B. PILON.....	Beloeil.....	Lib.
Champlain.....	63,086	32,715	27,987	12,446	J.-P. MATTE.....	St. Tite.....	Lib.
Chapleau.....	71,394	33,901	25,130	14,701	G. LAPRISE.....	La Sarre.....	S.C.
Charlevoix.....	48,906	24,136	20,184	7,390	L.-P.-A. BELANGER.....	Beaupré.....	S.C.
Châteauguay-Huntingdon-Laprairie.....	61,729	33,660	23,262	10,746	I. WATSON.....	Howick.....	Lib.
Chicoutimi.....	83,635	38,087	31,541	14,581	M. CÔTÉ.....	Chicoutimi North.....	S.C.
Compton-Frontenac.....	42,366	20,227	15,931	6,234	H. LATULIPPE.....	Lac Mégantic.....	S.C.
Dorchester.....	38,953	18,049	14,332	5,830	P.-A. BOUTIN.....	Ste. Marguerite de Dorchester.....	S.C.
Drummond-Orthabaska.....							
Gaspé.....	89,851	45,601	37,184	17,338	J.-L. PÉPIN.....	Drummondville.....	Lib.
Gatineau.....	65,300	29,804	23,982	10,783	A. CYR.....	Chandler.....	Lib.
Hull.....	58,771	31,116	25,030	11,589	R. LÉDUC.....	Maniwaki.....	Lib.
Îles-de-la-Madeleine.....	86,563	44,713	37,379	19,667	A. CARON.....	Hull.....	Lib.
Joliette-L'Assomption-Montcalm.....	12,479	5,656	4,827	3,053	M. SAUVÉ.....	Montreal.....	Lib.
Kamouraska.....	102,717	54,060	38,117	16,103	L.-J. PIGRON.....	Joliette.....	P.C.
Labelle.....	35,312	17,736	12,967	6,286	C.-E. DIONNE.....	St. Pascal.....	S.C.
Lac-Saint-Jean.....	45,701	22,228	17,487	6,951	G. GIROUARD.....	Mont Laurier.....	S.C.
Lapointe.....	48,149	21,777	18,606	9,318	M. LESSARD.....	Alma.....	S.C.
Lévis.....	74,408	33,482	28,455	13,312	G. GREGOIRE.....	Lapointe.....	S.C.
Longueuil.....	49,047	27,374	23,778	9,634	R. GUAY.....	Lauzon.....	Lib.
Lotbinière.....	107,318	56,390	43,030	17,223	J.-P. CÔTÉ.....	Longueuil.....	Lib.
Matapédia-Matane.....	38,529	18,301	16,028	6,957	A. CROQUETTE.....	Quebec.....	Lib.
Mégantic.....	67,226	29,145	24,079	10,265	Hon. R. TREMBLAY.....	Ottawa, Ont.....	Lib.
Montmagny-L'Islet.....	70,064	33,276	26,055	11,329	R.-C. LANGLOIS.....	Theftford Mines.....	S.C.
Nicolet-Yamaska.....	40,987	20,591	16,076	7,096	J. BERGER.....	Montmagny.....	Lib.
	45,192	23,968	19,767	9,438	C. VINCENT.....	Ste. Perpétue.....	P.C.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
—continued.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—concluded							
Pontiac—							
Témiscamingue.....	41,069	20,000	17,029	6,449	Hon. P. MARTINEAU....	Campbell's Bay...	P.C.
Portneuf.....	48,137	25,385	20,564	11,473	J.-L. FRENETTE.....	St. Marc des Carrières.....	S.C.
Quebec East.....	92,170	54,163	44,873	18,661	R. BEAULÉ.....	Quebec.....	S.C.
Quebec South.....	54,535	36,316	30,178	16,314	J.-C. CANTIN.....	Quebec.....	Lib.
Quebec West.....	57,763	33,006	27,559	13,136	L. FLOURE.....	Quebec.....	S.C.
Quebec—Montmorency.....	138,030	76,279	62,983	28,147	G. MARCOUX.....	Beauport.....	S.C.
Richelieu—Verchères.....	60,832	34,040	26,887	14,194	Hon. L. CARDIN.....	Ottawa, Ont.....	Lib.
Richmond—Wolfe.....	60,534	28,473	22,195	8,762	P.-T. ASSELIN.....	Bromptonville.....	Lib.
Rimouski.....	75,076	35,921	29,394	12,414	G. OUELLET.....	St. Mathieu.....	S.C.
Rivière-du-Loup—							
Témiscouata.....	58,909	26,916	22,710	10,753	R. GENDRON.....	Rivière du Loup..	Lib.
Roberval.....	56,234	24,570	20,107	10,345	C.-A. GAUTHIER.....	Mistassini.....	S.C.
Saint-Hyacinthe—							
Bagot.....	63,942	35,276	26,674	13,716	Hon. T. RICARD.....	St. Hyacinthe.....	P.C.
Saint-Jean—Iberville—							
Napierville.....	65,464	33,514	28,118	14,656	Y. DUPUIS.....	St. Jean.....	Lib.
Saint-Maurice—Lafleche	86,296	43,828	36,168	16,358	J. CHRÉTIEN.....	Shawinigan.....	Lib.
Saguenay.....	81,097	46,781	32,853	13,896	G. BLOUIN.....	Sept Îles.....	Lib.
Shefford.....	67,962	35,104	26,815	9,989	G. RONDEAU.....	St. Césaire.....	S.C.
Sherbrooke.....	73,417	41,514	32,067	12,708	G. CHAPELAINE.....	Sherbrooke.....	S.C.
Stanstead.....	43,309	23,844	18,899	7,649	Y. FOREST.....	Magog.....	Lib.
Terrebonne.....	102,450	55,872	41,716	19,015	L. CADIEUX.....	St. Jérôme.....	Lib.
Trois-Rivières.....	68,854	39,790	32,845	14,558	Hon. L. BALCER.....	Trois Rivières.....	P.C.
Vaudreuil—Soulanges.....	38,756	21,061	17,532	8,639	R. ÉMARD.....	Île Perrot.....	Lib.
Villeuve.....	79,675	36,305	30,115	18,096	R. CAUETTE.....	Rouyn.....	S.C.
Montreal and Jesus Islands—							
Cartier.....	51,819	19,944	13,842	6,642	M. L. KLEIN.....	Montreal.....	Lib.
Dollard.....	107,394	58,212	41,808	23,764	G. ROULEAU.....	Montreal.....	Lib.
Hochelaga.....	79,912	46,587	28,717	13,093	R. EUDÉS.....	Montreal.....	Lib.
Jacques-Cartier—							
Lasalle.....	163,148	94,681	76,086	44,299	R. ROCK.....	Lachine.....	Lib.
Lafontaine.....	50,325	31,411	21,975	10,929	G.-C. LACHANCE.....	Montreal.....	Lib.
Laurier.....	45,652	26,870	18,226	8,059	Hon. L. CHEVRIER.....	Ottawa, Ont.....	Lib.
Laval.....	193,437	112,822	81,825	43,452	J.-L. ROCHON.....	Montreal.....	Lib.
Maisonnette—Rosemont	108,023	64,850	42,704	20,595	Hon. J.-P. DESCHATELÉTS	Ottawa, Ont.....	Lib.
Mercier.....	233,964	120,083	80,904	33,450	P. BOULANGER.....	Montreal.....	Lib.
Mont-Royal.....	128,524	74,982	54,180	37,648	Hon. A. A. MACNAUGHTON.....	Ottawa, Ont.....	Lib.
Notre-Dame-de-Grâce.....	100,719	61,237	47,731	30,532	E.-T. ASSELIN.....	Montreal.....	Lib.
Outremont—Saint-Jean.....	63,888	33,945	23,856	13,305	Hon. M. LAMONTAGNE.....	Ottawa, Ont.....	Lib.
Papineau.....	87,588	48,526	30,605	15,677	Hon. G. FAVREAU.....	Ottawa, Ont.....	Lib.
St. Ann.....	38,173	19,601	12,989	7,215	G. LOISELLE.....	Montreal.....	Lib.
Saint-Antoine—							
Westmount.....	59,609	38,175	27,731	16,635	Hon. C. M. DRURY.....	Ottawa, Ont.....	Lib.
Saint-Denis.....	65,090	36,516	23,341	11,707	Hon. A. DENIS.....	Ottawa, Ont.....	Lib.
Saint-Henri.....	71,691	39,202	27,604	13,981	H.-P. LESSARD.....	Montreal.....	Lib.
Saint-Jacques.....	54,679	33,045	20,592	7,841	M. RINFRET.....	Montreal.....	Lib.
St. Lawrence—							
St. George.....	34,020	22,294	14,880	8,552	J. N. TURNER.....	Montreal.....	Lib.
Sainte-Marie.....	56,455	32,253	20,491	8,549	G.-J. VALADE.....	Montreal.....	P.C.
Verdun.....	78,317	46,396	35,223	19,473	B. S. MACKASEY.....	Verdun.....	Lib.
Ontario—							
(85 members)							
Algoma East.....	54,868	25,104	20,897	10,817	Rt. Hon. L. B. PEARSON*	Ottawa.....	Lib.
Algoma West.....	80,542	41,161	34,132	14,023	G. E. NIXON.....	Sault Ste. Marie..	Lib.
Brantford.....	54,392	30,700	25,115	10,804	J. E. BROWN.....	Brantford.....	Lib.
Brant—Haldimand.....	57,644	32,337	26,576	12,733	L. T. PENNELL.....	Brantford.....	Lib.
Bruce.....	29,334	17,382	14,541	7,451	J. LONEY.....	Tiverton.....	P.C.
Carleton.....	130,497	77,910	67,728	32,325	C. L. FRANCIS.....	Ottawa.....	Lib.
Cochrane.....	47,854	24,613	18,951	7,809	J.-A. HAREL.....	Kapuskasing.....	Lib.
Dufferin—Simcoe.....	53,226	26,173	21,738	10,278	J. E. MADILL.....	Orangeville.....	P.C.
Durham.....	39,916	21,873	18,994	8,720	R. C. HONEY.....	Port Hope.....	Lib.
Elgin.....	62,862	33,890	28,924	13,957	J. A. MCBAIN.....	St. Thomas.....	P.C.
Essex East.....	99,432	53,589	43,520	25,727	Hon. P. MARTIN.....	Ottawa.....	Lib.
Essex South.....	55,816	29,631	25,725	12,947	E. F. WHELAN.....	Amherstburg.....	Lib.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
—continued.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Ontario—continued							
Essex West.....	101,526	55,689	41,877	23,165	H. E. GRAY.....	Windsor.....	Lib.
Fort William.....	57,642	30,885	26,436	11,765	H. BADANAI.....	Fort William.....	Lib.
Glengarry—Prescott.....	46,443	24,336	20,057	9,906	V. ETHIER.....	Prescott.....	P.C.
Grenville—Dundas.....	40,026	22,592	18,155	10,434	JEAN CASSELMAN.....	Prescott.....	P.C.
Grey—Bruce.....	36,883	21,648	18,593	10,535	E. A. WINKLER.....	Hanover.....	P.C.
Grey North.....	38,824	23,110	19,225	9,804	P. V. NORLE.....	Shallow Lake.....	P.C.
Halton.....	107,285	59,151	49,368	25,482	H. C. HARLEY.....	Oakville.....	Lib.
Hamilton East.....	65,287	36,132	28,397	13,167	J. C. MUNRO.....	Hamilton.....	Lib.
Hamilton South.....	121,181	67,669	54,451	19,205	W. D. HOWE.....	Hamilton.....	N.D.P.
Hamilton West.....	72,131	41,264	31,380	13,701	J. MACALUSO.....	Hamilton.....	Lib.
Hastings—Frontenac.....	48,217	26,206	20,637	12,321	R. A. WEBB.....	Norwood.....	P.C.
Hastings South.....	70,806	37,041	32,228	15,505	R. TEMPLE.....	Belleville.....	Lib.
Huron.....	48,355	26,076	22,547	12,224	L. E. CARDIFF.....	Brussels.....	P.C.
Kenora—Rainy River.....	72,775	36,006	27,327	16,794	Hon. W. M. BENEDICKSON.....	Ottawa.....	L.-Lab.
Kent.....	71,285	39,541	32,307	15,381	H. W. DANFORTH.....	Blenheim.....	P.C.
Kingston.....	76,455	40,993	34,198	18,425	E. J. BENSON.....	Kingston.....	Lib.
Lambton—Kent.....	43,235	24,323	20,233	9,520	Mac T. McCUTCHEON.....	Florence.....	P.C.
Lambton West.....	40,081	41,342	32,760	15,978	W. F. FOY.....	Sarnia.....	Lib.
Lanark.....	47,121	22,565	18,579	10,475	G. H. DOUCETT.....	Carleton Place.....	P.C.
Leeds.....	126,674	70,159	55,846	25,902	J. R. MATHESON.....	Brockville.....	Lib.
Lincoln.....	73,970	44,288	34,229	15,700	J. C. McNULTY.....	St. Catharines.....	Lib.
London.....	101,721	57,158	44,599	19,850	J. A. IRVINE.....	Lambeth.....	P.C.
Middlesex East.....	45,731	25,585	21,299	10,247	C. E. MILLAR.....	London.....	P.C.
Middlesex West.....	78,010	42,688	31,480	10,247	W. H. A. THOMAS.....	Strathroy.....	P.C.
Niagara Falls.....	76,307	35,277	29,905	18,749	Hon. JUDY V. LAMARSH.....	Ottawa.....	Lib.
Nickel Belt.....	68,173	34,851	27,984	13,414	O.-J. GODIN.....	Sudbury.....	Lib.
Nipissing.....	50,475	27,464	22,973	16,547	Hon. J. R. GARLAND.....	Ottawa.....	Lib.
Norfolk.....	42,768	24,226	21,376	10,862	J. M. ROXBURGH.....	Simcoe.....	Lib.
Northumberland.....	125,784	70,303	58,602	22,902	PAULINE JEWETT.....	Brighton.....	Lib.
Ontario.....	51,828	31,132	25,591	12,043	Hon. M. STARR.....	Oshawa.....	P.C.
Ottawa East.....	67,131	38,934	31,169	18,634	J.-T. RICHARD.....	Ottawa.....	Lib.
Ottawa West.....	70,499	38,915	32,381	19,402	Hon. G. J. McLEATH.....	Ottawa.....	Lib.
Oxford.....	55,898	31,710	26,109	12,132	W. B. NESBITT.....	Woodstock.....	P.C.
Park Sound—Muskoka.....	111,575	65,035	53,517	28,009	G. H. AIKEN.....	Gravenhurst.....	P.C.
Peel.....	55,816	32,760	27,028	15,328	B. S. BEER.....	Brampton.....	Lib.
Perth.....	67,969	38,434	33,334	11,909	Hon. J. W. MONTEITH.....	Stratford.....	P.C.
Peterborough.....	87,977	43,314	35,828	16,141	F. F. STENSON.....	Peterborough.....	P.C.
Peter Arthur.....	37,758	21,051	17,532	8,869	D. M. FISHER.....	Ottawa.....	N.D.P.
Prince Edward—Lennox.....	55,616	26,368	23,478	8,869	A. D. ALKENBRACK.....	Napanee.....	P.C.
Renfrew North.....	35,929	19,760	17,774	8,765	J. J. FORGIE.....	Pembroke.....	Lib.
Renfrew South.....	124,368	62,929	52,664	31,182	P. TARDIF.....	Amprior.....	Lib.
Russell.....	58,773	30,591	25,236	12,662	P. B. RYNNARD.....	Ottawa.....	P.C.
Simcoe East.....	46,377	26,764	22,301	10,157	H. E. SMITH.....	Orillia.....	P.C.
Simcoe North.....	57,867	30,739	24,869	13,285	L. LAMOREUX.....	Barrie.....	P.C.
Stormont.....	73,945	38,808	32,632	15,794	D. R. MITCHELL.....	Cornwall.....	Lib.
Sudbury.....	50,654	26,290	21,800	7,356	A. PETERS.....	Sudbury.....	Lib.
Timiskaming.....	48,956	25,067	19,967	7,356	M. W. MARTIN.....	New Liskeard.....	Lib.
Timmins.....	48,789	28,798	23,223	10,538	C. LAMR.....	Timmins.....	N.D.P.
Victoria.....	115,579	66,651	51,036	22,007	O. W. WEICHEL.....	Lindsay.....	P.C.
Waterloo North.....	61,175	34,875	28,270	11,479	G. CHAPLIN.....	Elmira.....	P.C.
Waterloo South.....	86,731	47,181	36,408	19,879	W. H. McMILLAN.....	Galt.....	Lib.
Welland.....	32,638	18,440	15,419	8,391	W. M. HOWE.....	Thorold.....	P.C.
Wellington—Huron.....	59,150	33,436	28,822	11,350	A. D. HALES.....	Arthur.....	P.C.
Wellington South.....	99,940	54,814	44,612	18,589	J. B. MORISON.....	Guelph.....	P.C.
Wentworth.....	190,405	106,741	83,394	41,485	J. E. WALKER.....	Hamilton.....	Lib.
York Centre.....	89,709	59,809	47,660	21,038	S. OTTO.....	Downsview.....	Lib.
York East.....	90,618	55,890	44,552	20,188	R. B. COWAN.....	Toronto.....	Lib.
York—Humber.....	100,874	56,201	45,382	21,668	J. H. ADDISON.....	King.....	Lib.
York North.....	267,252	162,950	133,145	63,049	M. J. MOREAU.....	Scarborough.....	Lib.
York—Scarborough.....	114,867	62,892	48,520	21,042	M. GELBER.....	Toronto.....	Lib.
York South.....	162,604	98,473	81,136	41,480	L. P. KELLY.....	Toronto.....	Lib.
City of Toronto—							
Broadview.....	56,982	29,775	21,605	8,743	D. G. HAHN.....	Toronto.....	Lib.
Danforth.....	88,988	52,116	41,019	14,903	R. SCOTT.....	Scarborough.....	N.D.P.
Davenport.....	64,520	26,604	20,366	11,023	Hon. W. L. GORDON.....	Ottawa.....	Lib.
Eglinton.....	70,470	49,749	41,694	22,215	Hon. M. SHARP.....	Ottawa.....	Lib.
Greenwood.....	58,548	31,203	24,305	9,421	F. A. BREWIN.....	Toronto.....	N.D.P.
High Park.....	60,630	32,232	25,429	13,034	A. J. P. CAMERON.....	Toronto.....	Lib.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
—continued.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Ontario—concluded							
<i>City of Toronto—concl.</i>							
Parkdale.....	59,145	34,078	25,052	12,694	S. HAIKASZ.....	Toronto.....	Lib.
Rosedale.....	56,015	31,442	23,711	12,860	D. S. MACDONALD.....	Toronto.....	Lib.
St. Paul's.....	53,155	38,323	28,296	15,891	I. G. WAHN.....	Toronto.....	Lib.
Spadina.....	83,424	37,793	27,592	14,850	S. P. RYAN.....	Toronto.....	Lib.
Trinity.....	64,902	26,533	19,940	10,595	Hon. P. T. HELLYER.....	Ottawa.....	Lib.
Manitoba—							
(14 members)							
Brandon-Souris.....	65,036	37,337	30,067	18,100	Hon. W. G. DINSDALE.....	Brandon.....	P.C.
Churchill.....	54,952	29,478	22,099	11,707	R. SIMPSON.....	Flin Flon.....	P.C.
Dauphin.....	40,179	22,854	17,646	7,541	R. E. FORBES.....	Dauphin.....	P.C.
Lisgar.....	46,397	25,173	19,468	9,698	G. R. MUIR.....	Roland.....	P.C.
Marquette.....	47,865	25,254	21,549	11,729	J. N. MANDZIUK.....	Oakburn.....	P.C.
Portage-Neepawa.....	57,958	31,913	24,892	12,532	S. J. ENNS.....	Portage la Prairie.....	P.C.
Provencher.....	40,314	20,925	14,671	6,729	W. H. JORGENSEN.....	Morris.....	P.C.
St. Boniface.....	76,524	42,395	33,479	13,547	Hon. R.-J. TELLET.....	St. Boniface.....	Lib.
Selkirk.....	50,320	26,999	20,043	10,095	E. STEFANSON.....	Gimli.....	P.C.
Springfield.....	48,343	26,331	20,198	9,552	J. B. SLOGAN.....	Selkirk.....	P.C.
Winnipeg North.....	116,266	65,992	51,106	18,512	D. ORLIKOW.....	Winnipeg.....	N.D.P.
Winnipeg North Centre.....	78,615	42,432	29,785	13,619	S. H. KNOWLES.....	Winnipeg.....	N.D.P.
Winnipeg South.....	113,629	68,016	56,463	24,467	MARGARET KORANTZ.....	Winnipeg.....	Lib.
Winnipeg South Centre.....	85,288	51,426	40,404	17,092	Hon. G. CHURCHILL.....	Winnipeg.....	P.C.
Saskatchewan—							
(17 members)							
Assiniboia.....	45,553	24,032	21,033	9,393	L. WATSON.....	Avonlea.....	P.C.
Humboldt-Melfort.....	48,243	25,779	21,304	12,010	R. R. RAPP.....	Spalding.....	P.C.
Kindersley.....	47,960	24,631	21,779	9,944	R. W. CARLETON.....	Unity.....	P.C.
MacKenzie.....	44,479	23,627	17,617	10,010	S. J. KORCHINSKI.....	Rama.....	P.C.
Meadow Lake.....	37,937	18,344	13,927	7,819	A. C. CADIEU.....	Spiritwood.....	P.C.
Melville.....	40,255	22,815	19,497	9,412	J. N. ORMISTON.....	Cupar.....	P.C.
Moose Jaw-Lake Centre.....	81,960	45,927	38,454	20,958	J. E. PASCOE.....	Moose Jaw.....	P.C.
Moose Mountain.....	44,404	23,313	20,122	9,949	R. R. SOUTHAM.....	Gainsborough.....	P.C.
Prince Albert.....	58,493	31,782	25,066	17,824	Rt. Hon. J. G. DIEPFENBAKER*.....	Ottawa, Ont.....	P.C.
Qu'Appelle.....	39,362	21,138	17,829	10,690	Hon. A. HAMILTON.....	Manotick, Ont.....	P.C.
Regina City.....	89,293	50,600	42,662	19,605	K. H. MOORE.....	Regina.....	P.C.
Rosetown-Biggar.....	47,208	25,237	21,717	11,984	C. O. COOPER.....	Hawarden.....	P.C.
Rosthern.....	46,954	23,557	18,895	11,351	E. NASSERDEN.....	Saskatoon.....	P.C.
Saskatoon.....	95,575	58,154	49,469	26,237	H. F. JONES.....	Saskatoon.....	P.C.
Swift Current-Maple Creek.....	56,528	31,230	26,512	12,963	J. MCINTOSH.....	Swift Current.....	P.C.
The Battlefords.....	51,613	26,725	20,890	12,108	A. R. HORNER.....	Blaine Lake.....	P.C.
Yorkton.....	49,364	28,560	23,200	12,443	G. D. CLANCY.....	Yorkton.....	P.C.
Alberta—							
(17 members)							
Acadia.....	47,724	24,356	20,539	10,616	J. H. HORNER.....	Pollockville.....	P.C.
Athabaska.....	59,184	28,223	22,237	12,074	F. J. BIGG.....	Westlock.....	P.C.
Battle River-Camrose.....	58,655	31,255	25,889	15,565	C. S. SMALLWOOD.....	Irma.....	P.C.
Bow River.....	62,806	31,912	25,112	11,461	E. M. WOOLLIAMS.....	Calgary.....	P.C.
Calgary North.....	134,783	72,693	57,038	21,966	Hon. D. S. HARKNESS.....	Calgary.....	P.C.
Calgary South.....	124,248	69,807	54,174	21,619	Hon. H. W. HAYS.....	Ottawa, Ont.....	Lib.
Edmonton East.....	82,246	44,443	32,784	13,582	W. SKOREYKO.....	Edmonton.....	P.C.
Edmonton-Strathcona.....	121,124	66,289	53,646	18,880	T. J. NUGENT.....	Edmonton.....	P.C.
Edmonton West.....	150,357	79,781	63,204	26,578	Hon. M. LAMBERT.....	Ottawa, Ont.....	P.C.
Jasper-Eldon.....	70,983	35,923	26,405	14,776	H. M. HORNER.....	Barnhead.....	P.C.
Lethbridge.....	69,175	32,378	26,647	11,475	D. R. GUNDLOCK.....	Warner.....	P.C.
Macleod.....	50,968	25,928	21,874	9,785	L. E. KINDT.....	Nanton.....	P.C.
Medicine Hat.....	63,450	32,796	27,043	11,080	H. A. OLSON.....	Medicine Hat.....	S.C.
Peace River.....	75,811	39,275	27,666	16,111	G. W. BALDWIN.....	Peace River.....	P.C.
Red Deer.....	63,205	33,530	27,194	12,182	R. N. THOMPSON*.....	Red Deer.....	S.C.
Vegreville.....	42,798	23,416	19,139	12,859	F. J. W. FANE.....	Vegreville.....	P.C.
Wetaskiwin.....	55,424	28,435	21,973	11,601	H. A. MOORE.....	Wetaskiwin.....	P.C.
British Columbia—							
(22 members)							
Burnaby-Coquitlam.....	90,941	49,944	41,289	19,067	T. C. DOUGLAS*.....	Ottawa, Ont.....	N.D.P.
Burnaby-Richmond.....	96,835	52,520	43,758	16,578	R. W. PRITTE.....	Burnaby.....	N.D.P.

1.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Sixth General Election, Apr. 8, 1963
—concluded.

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
British Columbia—concluded							
Cariboo.....	82,173	43,073	30,805	9,335	B. R. LEROE.....	Prince George.....	S.C.
Coast-Capilano.....	113,734	65,689	54,155	27,177	J. DAVIS.....	West Vancouver.....	Lib.
Comox-Alberni.....	71,886	39,303	31,399	13,449	T. S. BARNETT.....	Alberni.....	N.D.P.
Esquimalt-Saanich.....	74,979	44,514	36,968	13,772	G. L. CHATTERTON.....	Royal Oak.....	P.C.
Fraser Valley.....	88,518	45,929	38,444	11,500	A. B. PATTERSON.....	Abbotsford.....	S.C.
Kamloops.....	73,446	37,988	29,433	8,604	C. J. M. WILLOUGHBY.....	Kamloops.....	P.C.
Kootenay East.....	41,449	22,164	18,438	6,165	J. A. BYRNE.....	Kimberley.....	Lib.
Kootenay West.....	57,135	29,939	23,046	8,595	H. W. HERRIDGE.....	Nakusp.....	N.D.P.
Nanaimo-Cowichan-The Islands.....	59,786	34,517	27,969	12,280	C. CAMERON.....	Lantzville.....	N.D.P.
New Westminster.....	142,803	79,027	64,220	23,609	B. MATHER.....	Ladner.....	N.D.P.
Okanagan Boundary.....	66,180	37,010	30,495	10,031	D. V. FUGH.....	Oliver.....	P.C.
Okanagan-Revelstoke.....	36,009	19,545	16,572	5,800	S. A. FLEMING.....	Vernon.....	P.C.
Skeena.....	58,740	26,572	20,382	10,743	F. HOWARD.....	Kittimat.....	N.D.P.
Vancouver-Burrard.....	60,347	41,081	32,204	12,048	S. R. BASFORD.....	Vancouver.....	Lib.
Vancouver Centre.....	44,920	34,541	24,359	9,472	Hon. J. R. NICHOLSON.....	Ottawa, Ont.....	Lib.
Vancouver East.....	59,496	31,920	23,594	12,688	H. E. WINCH.....	Vancouver.....	N.D.P.
Vancouver-Kingsway.....	67,228	37,858	29,772	13,966	A. A. WEBSTER.....	Vancouver.....	N.D.P.
Vancouver-Quadra.....	69,981	43,299	36,495	15,160	G. DEACHMAN.....	Vancouver.....	Lib.
Vancouver South.....	86,069	51,538	42,661	19,140	Hon. A. LAING.....	Ottawa, Ont.....	Lib.
Victoria.....	86,426	53,123	43,771	15,040	D. W. GROSS.....	Victoria.....	Lib.
Yukon Territory—(1 member)							
Yukon.....	14,628	6,878	6,051	2,969	E. NIELSEN.....	Whitehorse.....	P.C.
Northwest Territories—(1 member)							
Northwest Territories.....	14,895	11,856	8,663	4,814	G. RHÉAUME.....	Yellowknife.....	P.C.

2.—Voters on the Lists and Votes Polled at the Federal General Elections of 1958, 1962 and 1963

NOTE.—Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1948-49 edition, p. 94; those for 1940 in the 1956 edition, p. 81; those for 1945 in the 1957-58 edition, p. 57; and those for 1949, 1953 and 1957 in the 1962 edition, p. 71.

Province or Territory	Voters on the Lists			Votes Polled		
	1958	1962	1963	1958	1962	1963
	No.	No.	No.	No.	No.	No.
Newfoundland.....	204,778	215,565	221,321	160,928	155,263	152,175
Prince Edward Island.....	54,200	56,542	57,029	69,302 ¹	73,509 ¹	69,488 ¹
Nova Scotia.....	390,196	398,161	401,874	418,479 ²	423,556 ²	419,352 ²
New Brunswick.....	294,387	302,313	304,732	249,706	252,053	245,557
Quebec.....	2,576,682	2,728,191	2,807,634	2,045,199	2,117,644	2,143,246
Ontario.....	3,189,422	3,397,647	3,455,363	2,534,555	2,719,020	2,799,870
Manitoba.....	481,139	508,920	516,525	385,648	393,023	401,870
Saskatchewan.....	488,139	502,495	505,551	399,949	426,426	419,973
Alberta.....	608,820	680,253	700,920	452,977	505,752	552,164
British Columbia.....	830,237	891,686	921,074	629,982	691,930	740,229
Yukon Territory ³	6,071	6,782	6,878	5,469	5,978	6,051
Northwest Territories ⁴	6,716	11,790	11,565	4,945	8,502	8,663
Totals.....	9,131,200	9,700,325	9,910,757	7,357,139	7,772,656	7,958,636

¹ Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1963, 26,472 voters on the list cast 42,703 votes.

² Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1963, 122,846 voters on the list cast 183,402 votes.

³ Electoral District of Yukon.

⁴ Electoral District of Northwest Territories.

Pages 76-77, Indemnities and Allowances

Effective Apr. 8, 1963, the sessional allowance of members of the Senate and House of Commons was increased from \$8,000 to \$12,000 per annum. In addition to actual moving and travelling expenses from his constituency to Ottawa for each session of Parliament and actual telecommunication expenses incurred while in Ottawa, the expense allowance was increased in the case of each member of the Senate from \$2,000 to \$3,000 per annum and in the case of each member of the House of Commons from \$2,000 to \$6,000, to be paid quarterly. Additional annual allowances of \$4,000 (beyond the above-noted sessional allowance) are provided to each leader of a party having a recognized membership of 12 or more persons in the House of Commons, other than the Prime Minister and the member occupying the recognized position of Leader of the Opposition in the House of Commons, and likewise to the Chief Government Whip and to the Chief Opposition Whip in the House of Commons. A motor vehicle allowance (previously provided by Appropriation Act No. 5, 1931) was authorized by this amendment to the Senate and House of Commons Act to the amount of \$2,000 to be paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and of \$1,000 to be paid to the Speaker of the Senate and to the Speaker of the House of Commons.

Pages 81-91

Three provincial elections took place between Apr. 30 and Nov. 15, 1963:—

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A general election took place in Nova Scotia on Oct. 8, 1963 as a result of which the Party standing in the Legislature was: 39 Progressive Conservative and 4 Liberal. There was no change in the Ministry; to the office of the "Provincial Secretary, Minister of Public Welfare and Minister in charge of Emergency Measures Organization" was added "and Minister under the Water Act".

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A general election took place in Ontario on Sept. 25, 1963 as a result of which the Party standing in the Legislature was: 77 Progressive Conservative, 24 Liberal and 7 New Democratic Party. The Ministry as at Nov. 8, 1963 was as follows:—

<u>Office</u>	<u>Name</u>	<u>Date of Present Appointment</u>
Premier and President of the Council.....	HON. JOHN P. ROBERTS.....	Nov. 8, 1961
Minister of Lands and Forests.....	HON. A. KELSO ROBERTS.....	Oct. 25, 1962
Minister of Public Welfare.....	HON. LOUIS P. CECILE.....	Aug. 17, 1955
Treasurer.....	HON. JAMES N. ALLAN.....	Oct. 16, 1963
Minister of Public Works.....	HON. T. RAY CONNELL.....	Dec. 22, 1958
Minister of Health.....	HON. MATTHEW B. DYMOND.....	Dec. 22, 1958
Minister of Municipal Affairs.....	HON. J. WILFRID SPOONER.....	Oct. 25, 1962
Attorney General and Minister in charge of the Department of Insurance.....	HON. FREDERICK M. CASS.....	Oct. 25, 1962
Provincial Secretary and Minister of Citizenship.....	HON. JOHN YAREMKO.....	May 26, 1960
Minister of Mines.....	HON. GEORGE C. WARDROBE.....	Nov. 8, 1961
Minister of Labour.....	HON. H. LESLIE ROWNTREE.....	Oct. 25, 1962
Minister of Reform Institutions.....	HON. ALLAN GROSSMAN.....	Aug. 14, 1963
Minister of Agriculture.....	HON. WILLIAM A. STEWART.....	Nov. 8, 1961
Minister of Highways.....	HON. CHARLES S. MACNAUGHTON.....	Oct. 25, 1962
Minister of Transport.....	HON. IRWIN HASKETT.....	Aug. 14, 1963
Minister of Travel and Publicity.....	HON. JAMES A. C. AULD.....	Aug. 14, 1963
Minister of Education.....	HON. WILLIAM G. DAVIS.....	Oct. 25, 1962
Minister of Energy Resources.....	HON. JOHN R. SIMONETT.....	Oct. 16, 1963
Minister of Economics and Development.....	HON. STANLEY J. RANDALL.....	Nov. 8, 1963

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A general election took place in British Columbia on Sept. 30, 1963, as a result of which the Party standing in the Legislature was: 33 Social Credit, 13 New Democratic Party, 5 Liberal and 1 disputed. There was no change in the Ministry.

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One Federal Royal Commission was established during the period Apr. 30 to Nov. 15, 1963 as follows:—

<i>Nature of Commission</i>	<i>Co-chairmen*</i>	<i>Date Established</i>
To inquire into and report upon the existing state of bilingualism and biculturalism in Canada.	André Laurendeau Davidson Dunton	July 19, 1963

* See p. 1171 for other appointments to Commission.

Pages 104-122

Organizational changes were made in several government departments and agencies during the period Apr. 30 to Nov. 15, 1963, including the transfer of certain duties from one department to another and the transfer of certain Ministerial responsibilities. In particular, a Department of Industry was established taking over, in addition to its new functions, some of the duties of the Department of Trade and Commerce (see pp. 677 and 1173), and an Economic Council was established (see pp. 1168 and 1173). The Chart inserted between pp. 104 and 105 shows the organization of the Government of Canada as at Nov. 15, 1963 and therefore includes all transfers of Ministerial responsibilities taking place between Apr. 30 and that date.

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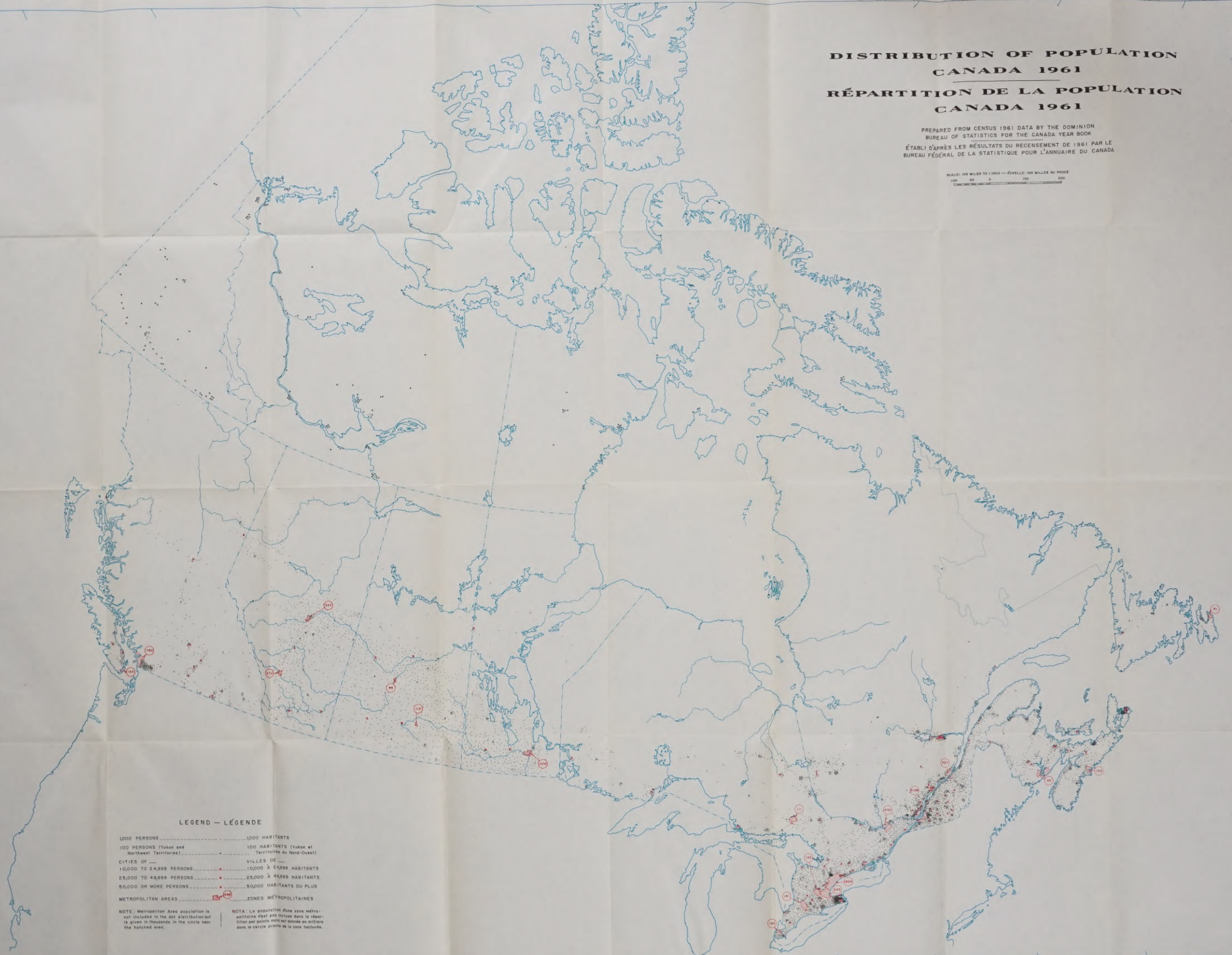


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ÉTABLI D'APRÈS LES RÉSULTATS DU RECENSEMENT DE 1961 PAR LE
BUREAU FÉDÉRAL DE LA STATISTIQUE POUR L'ANNUAIRE DU CANADA

SCALE: 100 MILES TO 1 INCH — ÉCHELLE: 100 MILES AU POUCE
100 50 0 100 200

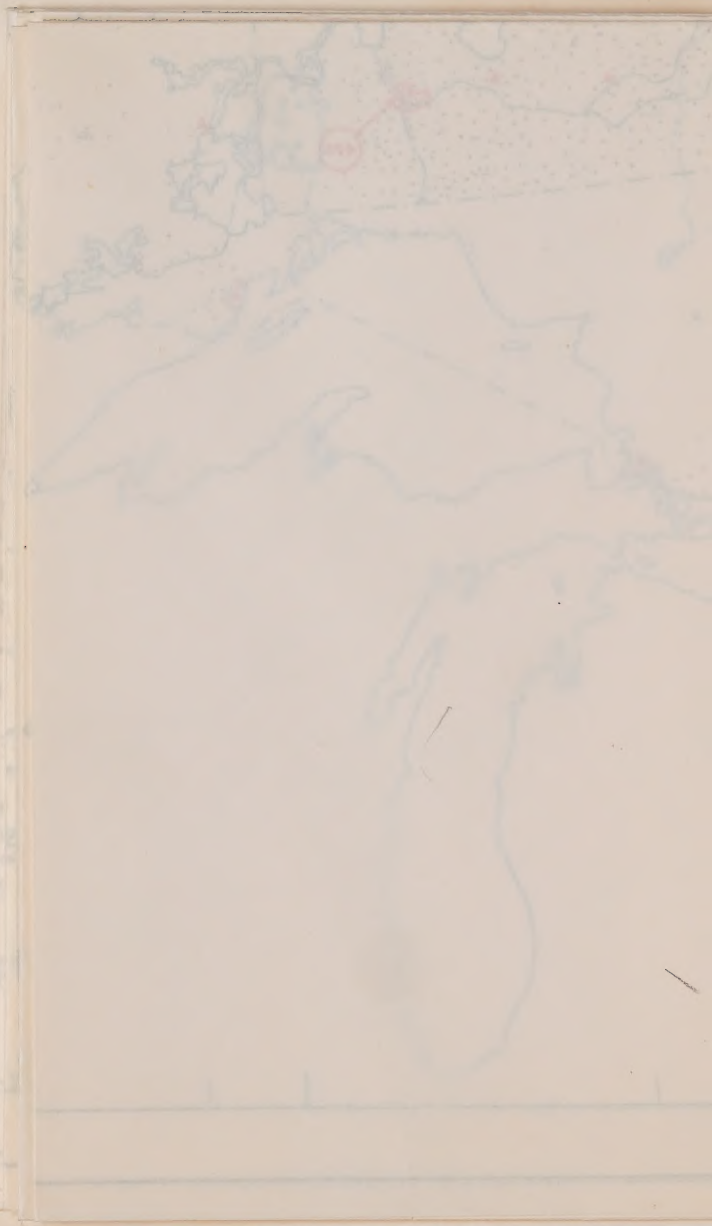


LEGEND — LÉGENDE

1,000 PERSONS	1,000 HABITANTS
100 PERSONS (Yukon and Northwest Territories)	100 HABITANTS (Yukon et Territoires du Nord-Ouest)
CITIES OF —	VILLES DE —
10,000 TO 24,999 PERSONS	10,000 À 24,999 HABITANTS
25,000 TO 49,999 PERSONS	25,000 À 49,999 HABITANTS
50,000 OR MORE PERSONS	50,000 HABITANTS OU PLUS
METROPOLITAN AREAS	ZONES MÉTROPOLITAINES

NOTE: Metropolitan Area population is not included in the dot distribution but is given in thousands in the circle near the hatched area.

NOTE: La population d'une zone métropolitaine n'est pas incluse dans la répartition par points mais est donnée en milliers dans le cercle proche de la zone hachurée.



CANADA

SCALE 100 MILES TO 1 INCH ON EARTH
STATUTE MILES 0 100 200
KILOMETERS 0 100 200

● FEDERAL CAPITAL ● PROVINCIAL CAPITAL

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